



**NASA SP-7039(38)**  
**Section 2**  
**Indexes**

# **NASA**

# **PATENT**

# **ABSTRACTS**

# **BIBLIOGRAPHY**

**A CONTINUING BIBLIOGRAPHY**

**Section 2 • Indexes**

**JANUARY 1991**

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**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION**

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NASA SP-7039(13) SEC 1	N78-10001 - N78-22018
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NASA SP-7039(22) SEC 1	N82-22141 - N82-34341
NASA SP-7039(23) SEC 1	N83-10001 - N83-23266
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NASA SP-7039(25) SEC 1	N84-10001 - N84-22526
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NASA SP-7039(27) SEC 1	N85-10001 - N85-22341
NASA SP-7039(28) SEC 1	N85-22342 - N85-36162
NASA SP-7039(29) SEC 1	N86-10001 - N86-22536
NASA SP-7039(30) SEC 1	N86-22537 - N86-33262
NASA SP-7039(31) SEC 1	N87-10001 - N87-20170
NASA SP-7039(32) SEC 1	N87-20171 - N87-30248
NASA SP-7039(33) SEC 1	N88-10001 - N88-20253
NASA SP-7039(34) SEC 1	N88-20254 - N88-30583
NASA SP-7039(35) SEC 1	N89-10001 - N89-20085
NASA SP-7039(36) SEC 1	N89-20086 - N89-30155
NASA SP-7039(37) SEC 1	N90-10001 - N90-20043
NASA SP-7039(38) SEC 1	N90-20044 - N90-30170

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**NASA**

**PATENT  
ABSTRACTS  
BIBLIOGRAPHY**

**A CONTINUING BIBLIOGRAPHY**

**Section 2 • Indexes**

**Indexes for the annotated references to NASA-owned inventions covered by U.S. patents and applications for patent that were announced in *Scientific and Technical Aerospace Reports (STAR)* between May 1969 and December 1990. This issue supersedes all previous Index Sections.**



National Aeronautics and Space Administration  
Office of Management  
Scientific and Technical Information Division  
Washington, DC  
1991

This supplement is available from the National Technical Information Service (NTIS), Springfield, Virginia 22161, price code A23.

# INTRODUCTION

Several thousand inventions result each year from the aeronautical and space research supported by the National Aeronautics and Space Administration. The inventions having important use in government programs or significant commercial potential are usually patented by NASA. These inventions cover practically all fields of technology and include many that have useful and valuable commercial application.

NASA inventions best serve the interests of the United States when their benefits are available to the public. In many instances, the granting of nonexclusive or exclusive licenses for the practice of these inventions may assist in the accomplishment of this objective. This bibliography is published as a service to companies, firms, and individuals seeking new, licensable products for the commercial market.

The *NASA Patent Abstracts Bibliography (NASA PAB)* is a semiannual NASA publication containing comprehensive abstracts and indexes of NASA-owned inventions covered by U.S. patents and applications for patent. The citations included in *NASA PAB* were originally published in NASA's *Scientific and Technical Aerospace Reports (STAR)* and cover *STAR* announcements made since May 1969.

For the convenience of the user, each issue of *NASA PAB* has a separately bound Abstract Section (Section 1) and Index Section (Section 2). Although each Abstract Section covers only the indicated six-month period, the Index Section is cumulative covering all NASA-owned inventions announced in *STAR* since 1969. Thus a complete set of *NASA PAB* would consist of the Abstract Sections of Issue 04 (January 1974) and Issue 12 (January 1978) and the Abstract Section for all subsequent issues and the Index Section for the most recent issue.

The 132 citations published in this issue of the Abstract Section cover the period July 1990 through December 1990. The Index Section references over 4900 citations covering the period May 1969 through December 1990.

## ABSTRACT SECTION (SECTION 1)

This *PAB* issue includes 10 major subject divisions separated into 76 specific categories and one general category/division. (See Table of Contents for the scope note of each category, under which are grouped appropriate NASA inventions.) This scheme was devised in 1975 and revised in 1987 in lieu of the 34 category divisions which were utilized in *PAB* supplements (01) through (06) covering *STAR* abstracts from May 1969 through January 1974. Each entry in the Abstract Section consists of a *STAR* citation accompanied by an abstract and, when appropriate, a key illustration taken from the patent or application for patent. Entries are arranged by subject category in order of the ascending NASA Accession Number originally assigned for *STAR* to the invention. The range of NASA Accession Numbers within each issue is printed on the inside front cover.

*Abstract Citation Data Elements:* Each of the abstract citations has several data elements useful for identification and indexing purposes, as follows:

- NASA Accession Number
- NASA Case Number
- Inventor's Name
- Title of Invention
- U.S. Patent Application Serial Number
- U.S. Patent Number (for issued patents only)
- U.S. Patent Office Classification Number(s)  
(for issued patents only)

These data elements are identified in the Typical Citation and Abstract and in the indexes.

## INDEX SECTION (SECTION 2)

The Index Section is divided into five indexes. These indexes are cross-indexed and are used to locate a single invention or groups of inventions.

**Subject Index:** Lists all inventions according to appropriate alphabetized technical term and indicates the related NASA Case Number, the Subject Category Number, and the Accession Number.

**Inventor Index:** Lists all inventions according to alphabetized names of inventors and indicates the related NASA Case Number, the Subject Category Number, and the Accession Number.

**Source Index:** Lists all inventions according to alphabetized source of invention (i.e., name of contractor or government installation where invention was made) and indicates the related NASA Case Number, the Subject Category Number, and the Accession Number.

**Number Index:** Lists inventions in order of ascending (1) NASA Case Number, (2) U.S. Patent Application Serial Number, (3) U.S. Patent Classification Number, and (4) U.S. Patent Number and indicates the related Subject Category Number and the Accession Number.

**Accession Number Index:** Lists all inventions in order of ascending Accession Number and indicates the related Subject Category Number, the NASA Case Number, the U.S. Patent Application Serial Number, the U.S. Patent Classification Number, and the U.S. Patent Number.

## HOW TO USE THIS PUBLICATION TO IDENTIFY NASA INVENTIONS

To identify one or more NASA inventions within a specific technical field or subject, several techniques are possible with the flexibility incorporated into the *NASA PAB*.

(1) *Using Subject Category:* To identify all NASA inventions in any one of the subject categories in this issue of *NASA PAB*, select the desired Subject Category in the Abstract Section (Section 1) and find the inventions abstracted thereunder.

(2) *Using Subject Index:* To identify all NASA inventions listed under a desired technical subject index term, (A) turn to the cumulative Subject Index in the Index Section and find the invention(s) listed under the desired technical subject term. (B) Note the indicated Accession Number and the Subject Category Number. (C) Using the indicated Accession Number, turn to the inside front cover of the Index Section to determine which issue of the Abstract Section includes the Accession Number desired. (D) To find the abstract of the particular invention in the issue of the Abstract Section selected, (1) use the Subject Category Number to locate the Subject Category and (2) use the Accession Number to locate the desired invention within the Subject Category listing.

(3) *Using Patent Classification Index:* To identify all inventions covered by issued NASA patents (not including applications for patent) within a desired Patent Classification, (A) turn to the Patent Classification Number in the Number Index of Section 2 and find the associated invention(s), and (B) follow the instructions outlined in (2)(B), and (D) above.

# TYPICAL CITATION AND ABSTRACT

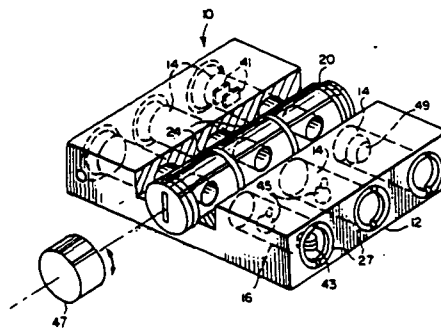
NASA SPONSORED

ACCESSION NUMBER → **N90-21209\*** National Aeronautics and Space Administration. ← **CORPORATE SOURCE**  
 Marshall Space Flight Center, Huntsville, AL.  
 TITLE → **APPARATUS FOR MIXING SOLUTIONS IN LOW GRAVITY ENVIRONMENTS Patent**  
 INVENTORS → **DANIEL C. CARTER**, inventor (to NASA) and **MARY B. BROOM**, inventor (to NASA) (USpace Research Association, Huntsville, AL.)  
 20 Mar. 1990 8 p Filed 15 Sep. 1988  
 NASA CASE NUMBER → (NASA-CASE-MFS-26047-1; US-PATENT-4,909,933;  
 US PATENT APPLICATIONS → US-PATENT-APPL-SN-244369; US-PATENT-CLASS-210-95;  
 SERIAL NUMBERS → US-PATENT-CLASS-210-94; US-PATENT-CLASS-210-205;  
 US-PATENT-CLASS-210-247; US-PATENT-CLASS-210-257.1;  
 US-PATENT-CLASS-210-321.6; US-PATENT-CLASS-210-340)  
 AVAILABILITY SOURCE → Avail: US Patent and Trademark Office CSCL 12A ← **COSATI CODE**

An apparatus is disclosed for allowing mixing of solutions in low gravity environments so as to carry out crystallization of proteins and other small molecules or other chemical syntheses, under conditions that maximize crystal growth and minimize disruptive turbulent effects. The apparatus is comprised of a housing, a plurality of chambers, and a cylindrical rotatable valve disposed between at least two of the chambers, said valve having an internal passageway so as to allow fluid movement between the chambers by rotation of the valve. In an alternate embodiment of the invention, a valve is provided having an additional internal passage way so that fluid from a third chamber can be mixed with the fluids of the first two chambers. This alternate embodiment of the invention is particularly desirable when it is necessary to provide a termination step to the crystal growth, or if a second synthetic step is required.

← **ABSTRACT**

Official Gazette of the U.S. Patent and Trademark Office



← **KEY ILLUSTRATION**

# Subject Categories

(1969 - 1973)

## 01 Aerodynamics

Includes aerodynamics of bodies, combinations, internal flow in ducts and turbomachinery; wings, rotors, and control surfaces. For applications see: 02 Aircraft; and 32 Space Vehicles. For related information see also: 12 Fluid Mechanics; and 33 Thermodynamics and Combustion.

## 02 Aircraft

Includes fixed-wing airplanes, helicopters, gliders, balloons, ornithopters, etc.; and specific types of complete aircraft; e.g., ground effect machines, STOL, and VTOL; flight tests; operating problems; e.g., sonic boom; safety and safety devices; economics; and stability and control. For basic research see: 01 Aerodynamics. For related information see also: 31 Space Vehicles; and 32 Structural Mechanics.

## 03 Auxiliary Systems

Includes fuel cells, energy conversion cells, and solar cells; auxiliary gas turbines; hydraulic, pneumatic and electrical systems; actuators; and inverters. For related information see also: 09 Electronic Equipment; 22 Nuclear Engineering; and 28 Propulsion Systems.

## 04 Biosciences

Includes aerospace medicine, exobiology, radiation effects on biological systems; physiological and psychological factors. For related information see also: 05 Biotechnology.

## 05 Biotechnology

Includes life support systems, human engineering; protective clothing and equipment; crew training and evaluation, and piloting. For related information see also: 04 Biosciences.

## 06 Chemistry

Includes chemical analysis and identification; e.g., spectroscopy. For applications see: 17 Materials, Metallic; 18 Materials, Nonmetallic; and 27 Propellants.

## 07 Communications

Includes communications equipment and techniques; noise; radio and communications blackout; modulation telemetry; tracking radar and optical observation; and wave propagation. For basic research see: 23 Physics, General; and 21 Navigation.

## 08 Computers

Includes computer operation and programming; and data processing. For applications, see specific categories. For related information see also: 19 Mathematics.

## 09 Electronic Equipment

Includes electronic test equipment and maintainability; component parts; e.g., electron tubes, tunnel diodes, transistors, integrated circuitry; microminiaturization. For basic research see: 10 Electronics. For related information see also: 07 Communications; and 21 Navigation.

## 10 Electronics

Includes circuit theory; and feedback and control theory. For applications see: 09 Electronic Equipment. For related information see specific Physics categories.

## 11 Facilities, Research and Support

Includes airports; lunar and planetary bases including associated vehicles; ground support systems; related logistics; simulators; test facilities; e.g., rocket engine test stands, shock tubes, and wind tunnels; test ranges; and tracking stations.

## 12 Fluid Mechanics

Includes boundary-layer flow; compressible flow; gas dynamics; hydrodynamics; and turbulence. For related information see also: 01 Aerodynamics; and 33 Thermodynamics and Combustion.

## 13 Geophysics

Includes aeronomy; upper and lower atmosphere studies; oceanography; cartography; and geodesy. For related information see also: 20 Meteorology; 29 Space Radiation; and 30 Space Sciences.

## 14 Instrumentation and Photography

Includes design, installation, and testing of instrumentation systems; gyroscopes; measuring instruments and gauges; recorders, transducers; aerial photography; and telescopes and cameras.

## 15 Machine Elements and Processes

Includes bearings, seals, pumps, and other mechanical equipment; lubrication, friction, and wear; manufacturing processes and quality control; reliability; drafting; and materials fabrication, handling, and inspection.

## 16 Masers

Includes applications of masers and lasers. For basic research see: 26 Physics, Solid-State.

## 17 Materials, Metallic

Includes cermets; corrosion; physical and mechanical properties of materials; metallurgy; and applications as structural materials. For basic research see: 06 Chemistry. For related information see also: 18 Materials, Nonmetallic; and 32 Structural Mechanics.

## 18 Materials, Nonmetallic

Includes corrosion; physical and mechanical properties of materials; e.g., plastics; and elastomers, hydraulic fluids, etc. For basic research see: 06 Chemistry. For related information see also: 17 Materials, Metallic; 27 Propellants; and 32 Structural Mechanics.

**19 Mathematics**

Includes calculation methods and theory; and numerical analysis. For applications see specific categories. For related information see also: 08 Computers.

**20 Meteorology**

Includes climatology; weather forecasting; and visibility studies. For related information see also: 13 Geophysics; and 30 Space Sciences.

**21 Navigation**

Includes guidance; autopilots; star and planet tracking; inertial platforms; and air traffic control. For related information see also: 07 Communications.

**22 Nuclear Engineering**

Includes nuclear reactors and nuclear heat sources used for propulsion and auxiliary power. For basic research see: 24 Physics, Atomic, Molecular, and Nuclear. For related information see also: 03 Auxiliary Systems; and 28 Propulsion Systems.

**23 Physics, General**

Includes acoustics, cryogenics, mechanics, and optics. For astrophysics see: 30 Space Sciences. For geophysics and related information see also: 13 Geophysics; 20 Meteorology; and 29 Space Radiation.

**24 Physics, Atomic, Molecular, and Nuclear**

Includes atomic, molecular and nuclear physics. For applications see: 22 Nuclear Engineering. For related information see also: 29 Space Radiation.

**25 Physics, Plasma**

Includes magnetohydrodynamics. For applications see: 28 Propulsion Systems.

**26 Physics, Solid-State**

Includes semiconductor theory; and superconductivity. For applications see: 16 Masers. For related information see also: 10 Electronics.

**27 Propellants**

Includes fuels; igniters; and oxidizers. For basic research see: 06 Chemistry; and 33 Thermodynamics and Combustion. For related information see also: 28 Propulsion Systems.

**28 Propulsion Systems**

Includes air breathing, electric, liquid, solid, and magnetohydrodynamic propulsion. For nuclear propulsion see: 22 Nuclear Engineering. For basic research see: 23 Physics, General; and 33 Thermodynamics and Combustion. For applications see: 31 Space Vehicles. For related information see also: 27 Propellants.

**29 Space Radiation**

Includes cosmic radiation; solar flares; solar radiation; and Van Allen radiation belts. For related information see also: 13 Geophysics; and 24 Physics, Atomic, Molecular, and Nuclear.

**30 Space Sciences**

Includes astronomy and astrophysics; cosmology; lunar and planetary flight and exploration; and theoretical analysis of orbits and trajectories. For related information see also: 11 Facilities, Research and Support; and 31 Space Vehicles.

**31 Space Vehicles**

Includes launch vehicles; manned space capsules; clustered and multistage rockets; satellites; sounding rockets and probes; and operating problems. For basic research see: 30 Space Sciences. For related information see also: 28 Propulsion Systems; and 32 Structural Mechanics.

**32 Structural Mechanics**

Includes structural element design and weight analysis; fatigue; thermal stress; impact phenomena; vibration; flutter; inflatable structures; and structural tests. For related information see also: 17 Materials, Metallic; and 18 Materials, Nonmetallic.

**33 Thermodynamics and Combustion**

Includes ablation, cooling, heating, heat transfer, thermal balance, and other thermal effects; and combustion theory. For related information see also: 12 Fluid Mechanics; and 27 Propellants.

**34 General**

Includes information of a broad nature related to industrial applications and technology, and to basic research; defense aspects; information retrieval; management; law and related legal matters; and legislative hearings and documents.

# TABLE OF CONTENTS

## Revised Subject Categories

(Includes 1974 and 1987 revisions)

### AERONAUTICS

Includes aeronautics (general); aerodynamics; air transportation and safety; aircraft communications and navigation; aircraft design, testing and performance; aircraft instrumentation; aircraft propulsion and power; aircraft stability and control; and research and support facilities (air).

For related information see also *Astronautics*.

#### 01 AERONAUTICS (GENERAL)

#### 02 AERODYNAMICS

Includes aerodynamics of bodies, combinations, wings, rotors, and control surfaces; and internal flow in ducts and turbomachinery.

For related information see also *34 Fluid Mechanics and Heat Transfer*.

#### 03 AIR TRANSPORTATION AND SAFETY

Includes passenger and cargo air transport operations; and aircraft accidents.

For related information see also *16 Space Transportation* and *85 Urban Technology and Transportation*.

#### 04 AIRCRAFT COMMUNICATIONS AND NAVIGATION

Includes digital and voice communication with aircraft; air navigation systems (satellite and ground based); and air traffic control.

For related information see also *17 Space Communications, Spacecraft Communications, Command and Tracking* and *32 Communications and Radar*.

#### 05 AIRCRAFT DESIGN, TESTING AND PERFORMANCE

Includes aircraft simulation technology.

For related information see also *18 Spacecraft Design, Testing and Performance* and *39 Structural Mechanics*. For land transportation vehicles see *85 Urban Technology and Transportation*.

#### 06 AIRCRAFT INSTRUMENTATION

Includes cockpit and cabin display devices; and flight instruments.

For related information see also *19 Spacecraft Instrumentation* and *35 Instrumentation and Photography*.

#### 07 AIRCRAFT PROPULSION AND POWER

Includes prime propulsion systems and systems components, e.g., gas turbine engines and compressors; and onboard auxiliary power plants for aircraft.

For related information see also *20 Spacecraft Propulsion and Power*, *28 Propellants and Fuels*, and *44 Energy Production and Conversion*.

#### 08 AIRCRAFT STABILITY AND CONTROL

Includes aircraft handling qualities; piloting; flight controls; and autopilots.

For related information see also *05 Aircraft Design, Testing and Performance*.

### 09 RESEARCH AND SUPPORT FACILITIES (AIR)

Includes airports, hangars and runways; aircraft repair and overhaul facilities; wind tunnels; shock tubes; and aircraft engine test stands.

For related information see also *14 Ground Support Systems and Facilities (Space)*.

### ASTRONAUTICS

Includes astronautics (general); astrodynamics; ground support systems and facilities (space); launch vehicles and space vehicles; space transportation; space communications, spacecraft communications, command and tracking; spacecraft design, testing and performance; spacecraft instrumentation; and spacecraft propulsion and power.

For related information see also *Aeronautics*.

#### 12 ASTRONAUTICS (GENERAL)

For extraterrestrial exploration see *91 Lunar and Planetary Exploration*.

#### 13 ASTRODYNAMICS

Includes powered and free-flight trajectories; and orbital and launching dynamics.

#### 14 GROUND SUPPORT SYSTEMS AND FACILITIES (SPACE)

Includes launch complexes, research and production facilities; ground support equipment, e.g., mobile transporters; and simulators.

For related information see also *09 Research and Support Facilities (Air)*.

#### 15 LAUNCH VEHICLES AND SPACE VEHICLES

Includes boosters; operating problems of launch/space vehicle systems; and reusable vehicles.

For related information see also *20 Spacecraft Propulsion and Power*.

#### 16 SPACE TRANSPORTATION

Includes passenger and cargo space transportation, e.g., shuttle operations; and space rescue techniques.

For related information see also *03 Air Transportation and Safety* and *18 Spacecraft Design, Testing and Performance*. For space suits see *54 Man/System Technology and Life Support*.

#### 17 SPACE COMMUNICATIONS, SPACECRAFT COMMUNICATIONS, COMMAND AND TRACKING

Includes telemetry; space communications networks; astronavigation and guidance; and radio blackout.

For related information see also *04 Aircraft Communications and Navigation* and *32 Communications and Radar*.



## **18 SPACECRAFT DESIGN, TESTING AND PERFORMANCE**

Includes satellites; space platforms; space stations; spacecraft systems and components such as thermal and environmental controls; and attitude controls.

For life support systems see *54 Man/System Technology and Life Support*. For related information see also *05 Aircraft Design, Testing and Performance*, *39 Structural Mechanics*, and *16 Space Transportation*.

## **19 SPACECRAFT INSTRUMENTATION**

For related information see also *06 Aircraft Instrumentation* and *35 Instrumentation and Photography*.

## **20 SPACECRAFT PROPULSION AND POWER**

Includes main propulsion systems and components, e.g. rocket engines; and spacecraft auxiliary power sources.

For related information see also *07 Aircraft Propulsion and Power*, *28 Propellants and Fuels*, *44 Energy Production and Conversion*, and *15 Launch Vehicles and Space Vehicles*.

## **CHEMISTRY AND MATERIALS**

Includes chemistry and materials (general); composite materials; inorganic and physical chemistry; metallic materials; nonmetallic materials; propellants and fuels; and materials processing.

## **23 CHEMISTRY AND MATERIALS (GENERAL)**

## **24 COMPOSITE MATERIALS**

Includes physical, chemical, and mechanical properties of laminates and other composite materials.

For ceramic materials see *27 Nonmetallic Materials*.

## **25 INORGANIC AND PHYSICAL CHEMISTRY**

Includes chemical analysis, e.g., chromatography; combustion theory; electrochemistry; and photochemistry.

For related information see also *77 Thermodynamics and Statistical Physics*.

## **26 METALLIC MATERIALS**

Includes physical, chemical, and mechanical properties of metals, e.g., corrosion; and metallurgy.

## **27 NONMETALLIC MATERIALS**

Includes physical, chemical, and mechanical properties of plastics, elastomers, lubricants, polymers, textiles, adhesives, and ceramic materials.

For composite materials see *24 Composite Materials*.

## **28 PROPELLANTS AND FUELS**

Includes rocket propellants, igniters and oxidizers; their storage and handling procedures; and aircraft fuels.

For related information see also *07 Aircraft Propulsion and Power*, *20 Spacecraft Propulsion and Power*, and *44 Energy Production and Conversion*.

## **29 MATERIALS PROCESSING**

Includes space-based development of products and processes for commercial application.

For biological materials see *55 Space Biology*.

## **ENGINEERING**

Includes engineering (general); communications and radar; electronics and electrical engineering; fluid mechanics and heat transfer; instrumentation and photography; lasers and masers; mechanical engineering; quality assurance and reliability; and structural mechanics.

For related information see also *Physics*.

## **31 ENGINEERING (GENERAL)**

Includes vacuum technology; control engineering; display engineering; cryogenics; and fire prevention.

## **32 COMMUNICATIONS AND RADAR**

Includes radar; land and global communications; communications theory; and optical communications.

For related information see also *04 Aircraft Communications and Navigation* and *17 Space Communications, Spacecraft Communications, Command and Tracking*. For search and rescue see *03 Air Transportation and Safety*, and *16 Space Transportation*.

## **33 ELECTRONICS AND ELECTRICAL ENGINEERING**

Includes test equipment and maintainability; components, e.g., tunnel diodes and transistors; microminiaturization; and integrated circuitry.

For related information see also *60 Computer Operations and Hardware* and *76 Solid-State Physics*.

## **34 FLUID MECHANICS AND HEAT TRANSFER**

Includes boundary layers; hydrodynamics; fluidics; mass transfer and ablation cooling.

For related information see also *02 Aerodynamics* and *77 Thermodynamics and Statistical Physics*.

## **35 INSTRUMENTATION AND PHOTOGRAPHY**

Includes remote sensors; measuring instruments and gauges; detectors; cameras and photographic supplies; and holography.

For aerial photography see *43 Earth Resources and Remote Sensing*. For related information see also *06 Aircraft Instrumentation* and *19 Spacecraft Instrumentation*.

## **36 LASERS AND MASERS**

Includes parametric amplifiers.

For related information see also *76 Solid-State Physics*.

## **37 MECHANICAL ENGINEERING**

Includes auxiliary systems (nonpower); machine elements and processes; and mechanical equipment.

## **38 QUALITY ASSURANCE AND RELIABILITY**

Includes product sampling procedures and techniques; and quality control.

## **39 STRUCTURAL MECHANICS**

Includes structural element design and weight analysis; fatigue; and thermal stress.

For applications see *05 Aircraft Design, Testing and Performance* and *18 Spacecraft Design, Testing and Performance*.

## **GEOSCIENCES**

Includes geosciences (general); earth resources and remote sensing; energy production and conversion; environment pollution; geophysics; meteorology and climatology; and oceanography.

For related information see also *Space Sciences*.

### **42 GEOSCIENCES (GENERAL)**

#### **43 EARTH RESOURCES AND REMOTE SENSING**

Includes remote sensing of earth resources by aircraft and spacecraft; photogrammetry; and aerial photography.

For instrumentation see *35 Instrumentation and Photography*.

#### **44 ENERGY PRODUCTION AND CONVERSION**

Includes specific energy conversion systems, e.g., fuel cells; global sources of energy; geophysical conversion; and windpower.

For related information see also *07 Aircraft Propulsion and Power*, *20 Spacecraft Propulsion and Power*, and *28 Propellants and Fuels*.

#### **45 ENVIRONMENT POLLUTION**

Includes atmospheric, noise, thermal, and water pollution.

#### **46 GEOPHYSICS**

Includes aeronomy; upper and lower atmosphere studies; ionospheric and magnetospheric physics; and geomagnetism.

For space radiation see *93 Space Radiation*.

#### **47 METEOROLOGY AND CLIMATOLOGY**

Includes weather forecasting and modification.

#### **48 OCEANOGRAPHY**

Includes biological, dynamic, and physical oceanography; and marine resources.

For related information see also *43 Earth Resources and Remote Sensing*.

## **LIFE SCIENCES**

Includes life sciences (general); aerospace medicine; behavioral sciences; man/system technology and life support; and space biology.

### **51 LIFE SCIENCES (GENERAL)**

#### **52 AEROSPACE MEDICINE**

Includes physiological factors; biological effects of radiation; and effects of weightlessness on man and animals.

#### **53 BEHAVIORAL SCIENCES**

Includes psychological factors; individual and group behavior; crew training and evaluation; and psychiatric research.

#### **54 MAN/SYSTEM TECHNOLOGY AND LIFE SUPPORT**

Includes human engineering; biotechnology; and space suits and protective clothing.

For related information see also *16 Space Transportation*.

### **55 SPACE BIOLOGY**

Includes exobiology; planetary biology; and extraterrestrial life.

## **MATHEMATICAL AND COMPUTER SCIENCES**

Includes mathematical and computer sciences (general); computer operations and hardware; computer programming and software; computer systems; cybernetics; numerical analysis; statistics and probability; systems analysis; and theoretical mathematics.

### **59 MATHEMATICAL AND COMPUTER SCIENCES (GENERAL)**

#### **60 COMPUTER OPERATIONS AND HARDWARE**

Includes hardware for computer graphics, firmware, and data processing.

For components see *33 Electronics and Electrical Engineering*.

#### **61 COMPUTER PROGRAMMING AND SOFTWARE**

Includes computer programs, routines, algorithms, and specific applications, e.g., CAD/CAM.

#### **62 COMPUTER SYSTEMS**

Includes computer networks and special application computer systems.

#### **63 CYBERNETICS**

Includes feedback and control theory, artificial intelligence, robotics and expert systems.

For related information see also *54 Man/System Technology and Life Support*.

#### **64 NUMERICAL ANALYSIS**

Includes iteration, difference equations, and numerical approximation.

#### **65 STATISTICS AND PROBABILITY**

Includes data sampling and smoothing; Monte Carlo method; and stochastic processes.

#### **66 SYSTEMS ANALYSIS**

Includes mathematical modeling; network analysis; and operations research.

#### **67 THEORETICAL MATHEMATICS**

Includes topology and number theory.

## **PHYSICS**

Includes physics (general); acoustics; atomic and molecular physics; nuclear and high-energy physics; optics; plasma physics; solid-state physics; and thermodynamics and statistical physics.

For related information see also *Engineering*.

### **70 PHYSICS (GENERAL)**

For precision time and time interval (PTTI) see *35 Instrumentation and Photography*; for geophysics, astrophysics or solar physics see *46 Geophysics*, *90 Astrophysics*, or *92 Solar Physics*.

## **71 ACOUSTICS**

Includes sound generation, transmission, and attenuation.

For noise pollution see *45 Environment Pollution*.

## **72 ATOMIC AND MOLECULAR PHYSICS**

Includes atomic structure, electron properties, and molecular spectra.

## **73 NUCLEAR AND HIGH-ENERGY PHYSICS**

Includes elementary and nuclear particles; and reactor theory.

For space radiation see *93 Space Radiation*.

## **74 OPTICS**

Includes light phenomena and optical devices.

For lasers see *36 Lasers and Masers*.

## **75 PLASMA PHYSICS**

Includes magnetohydrodynamics and plasma fusion.

For ionospheric plasmas see *46 Geophysics*. For space plasmas see *90 Astrophysics*.

## **76 SOLID-STATE PHYSICS**

Includes superconductivity.

For related information see also *33 Electronics and Electrical Engineering* and *36 Lasers and Masers*.

## **77 THERMODYNAMICS AND STATISTICAL PHYSICS**

Includes quantum mechanics; theoretical physics; and Bose and Fermi statistics.

For related information see also *25 Inorganic and Physical Chemistry* and *34 Fluid Mechanics and Heat Transfer*.

## **SOCIAL SCIENCES**

Includes social sciences (general); administration and management; documentation and information science; economics and cost analysis; law, political science, and space policy; and urban technology and transportation.

## **80 SOCIAL SCIENCES (GENERAL)**

Includes educational matters.

## **81 ADMINISTRATION AND MANAGEMENT**

Includes management planning and research.

## **82 DOCUMENTATION AND INFORMATION SCIENCE**

Includes information management; information storage and retrieval technology; technical writing; graphic arts; and micrography.

For computer documentation see *61 Computer Programming and Software*.

## **83 ECONOMICS AND COST ANALYSIS**

Includes cost effectiveness studies.

## **84 LAW, POLITICAL SCIENCE AND SPACE POLICY**

Includes NASA appropriation hearings; aviation law; space law and policy; international law; international cooperation; and patent policy.

## **85 URBAN TECHNOLOGY AND TRANSPORTATION**

Includes applications of space technology to urban problems; technology transfer; technology assessment; and surface and mass transportation.

For related information see *03 Air Transportation and Safety*, *16 Space Transportation*, and *44 Energy Production and Conversion*.

## **SPACE SCIENCES**

Includes space sciences (general); astronomy; astrophysics; lunar and planetary exploration; solar physics; and space radiation.

For related information see also *Geosciences*.

## **88 SPACE SCIENCES (GENERAL)**

## **89 ASTRONOMY**

Includes radio, gamma-ray, and infrared astronomy; and astrometry.

## **90 ASTROPHYSICS**

Includes cosmology; celestial mechanics; space plasmas; and interstellar and interplanetary gases and dust.

For related information see also *75 Plasma Physics*.

## **91 LUNAR AND PLANETARY EXPLORATION**

Includes planetology; and manned and unmanned flights.

For spacecraft design or space stations see *18 Spacecraft Design, Testing and Performance*.

## **92 SOLAR PHYSICS**

Includes solar activity, solar flares, solar radiation and sunspots.

For related information see *93 Space Radiation*.

## **93 SPACE RADIATION**

Includes cosmic radiation; and inner and outer earth's radiation belts.

For biological effects of radiation see *52 Aerospace Medicine*. For theory see *73 Nuclear and High-Energy Physics*.

## **GENERAL**

Includes aeronautical, astronautical, and space science related histories, biographies, and pertinent reports too broad for categorization; histories or broad overviews of NASA programs.

## **99 GENERAL**

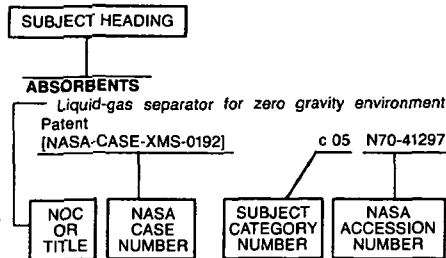
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## NASA PATENT ABSTRACTS BIBLIOGRAPHY Section 2

### Typical Subject Index Listing



The subject heading is a key to the subject content of the document. A brief description of the document, e.g., title, title plus a title extension, or notation of content (NOC), is included for each subject entry to indicate the subject heading context; these descriptions are arranged under each subject heading in ascending accession number order. The NASA case number serves as the prime access number to the patent documents. The subject category number indicates the category in Section 1 (Abstracts) in which the patent citation and abstract are located. The NASA accession number denotes the number by which the citation is identified within the subject category.

## A

### ABERRATION

High speed multi focal plane optical system  
[NASA-CASE-GSC-12683-1] c 74 N83-36898

### ABILITIES

Kinesimetric method and apparatus  
[NASA-CASE-MSC-18929-1] c 39 N83-20280

### ABLATION

Transpirationally cooled heat ablation system Patent  
[NASA-CASE-XMS-02677] c 31 N70-42075

Hypersonic test facility Patent  
[NASA-CASE-XLA-00378] c 11 N71-15925

Hypersonic test facility Patent  
[NASA-CASE-XLA-05378] c 11 N71-21475

Ablation sensor Patent  
[NASA-CASE-XLA-01794] c 33 N71-21586

Ablation sensor Patent  
[NASA-CASE-XLA-01791] c 14 N71-22991

Ablative system  
[NASA-CASE-LEW-10359] c 33 N72-25911

### ABLATIVE MATERIALS

Method for making a heat insulating and ablative structure  
[NASA-CASE-XMS-01108] c 15 N69-24322

Ablation sensor  
[NASA-CASE-XLA-01781] c 14 N69-39975

Method for molding compounds Patent  
[NASA-CASE-XLA-01091] c 15 N71-10672

Ablative resin Patent  
[NASA-CASE-XLE-05913] c 33 N71-14032

Ablation structures Patent  
[NASA-CASE-XMS-01816] c 33 N71-15623

Method and apparatus for making a heat insulating and ablative structure Patent  
[NASA-CASE-XMS-02009] c 33 N71-20834

Thermal protection ablation spray system Patent  
[NASA-CASE-XLA-04251] c 18 N71-26100

Stand-off type ablative heat shield  
[NASA-CASE-MSC-12143-1] c 33 N72-17947

Ablative system  
[NASA-CASE-LEW-10359] c 33 N72-25911

Ablative system  
[NASA-CASE-LEW-10359-2] c 33 N73-25952

Ablation article and method  
[NASA-CASE-LAR-10439-1] c 33 N73-27796

Dual measurement ablation sensor  
[NASA-CASE-LAR-10105-1] c 34 N74-15652

Sprayable low density ablator and application process  
[NASA-CASE-MFS-23506-1] c 24 N78-24290

Intumescent-ablator coatings using endothermic fillers  
[NASA-CASE-ARC-11043-1] c 24 N78-27180

Cork-resin ablative insulation for complex surfaces and method for applying the same  
[NASA-CASE-MFS-23626-1] c 24 N80-26388

Controlled overspray spray nozzle  
[NASA-CASE-MFS-25139-1] c 34 N82-13376

### ABORT APPARATUS

Coupling for linear shaped charge Patent  
[NASA-CASE-XLA-00189] c 33 N70-36846

### ABRASION

Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-3] c 37 N82-19540

### ABRASION RESISTANCE

Potassium silicate zinc coatings  
[NASA-CASE-GSC-10361-1] c 18 N72-23581

Process for producing a well-adhered durable optical coating on an optical plastic substrate — abrasion resistant polymethyl methacrylate lenses  
[NASA-CASE-ARC-11039-1] c 74 N78-32854

Sandblasting nozzle  
[NASA-CASE-NPO-13823-1] c 37 N81-25371

Heat sealable, flame and abrasion resistant coated fabric — clothing and containers for space exploration  
[NASA-CASE-MSC-18382-1] c 27 N82-16238

Heat sealable, flame and abrasion resistant coated fabric  
[NASA-CASE-MSC-18382-2] c 27 N84-14324

Cryogenic anti-friction bearing with inner race  
[NASA-CASE-MFS-28384-1] c 37 N90-27112

### ABRASIVES

Method for machining holes in composite materials  
[NASA-CASE-MFS-28044-1] c 31 N87-25491

### ABSORBENTS

Liquid-gas separator for zero gravity environment Patent  
[NASA-CASE-XMS-01492] c 05 N70-41297

Fluid flow control valve Patent  
[NASA-CASE-XLE-00703] c 15 N71-15967

Noncontaminating swabs  
[NASA-CASE-MFS-18100] c 15 N72-11390

Protein sterilization method of firefly luciferase using reduced pressure and molecular sieves  
[NASA-CASE-GSC-10225-1] c 06 N73-27086

Oil and fat absorbing polymers  
[NASA-CASE-NPO-11809-2] c 27 N77-31308

Absorbent product and articles made therefrom  
[NASA-CASE-MSC-18223-2] c 54 N84-11758

### ABSORBERS (EQUIPMENT)

Absorbent product to absorb fluids — for collection of human wastes  
[NASA-CASE-MSC-18223-1] c 24 N82-29362

Variable response load limiting device  
[NASA-CASE-LAR-12801-1] c 37 N88-23982

### ABSORBERS (MATERIALS)

Broadband choke for antenna structure  
[NASA-CASE-XMS-05303] c 07 N69-27462

Analytical photoionization mass spectrometer with an argon gas filter between the light source and monochromator Patent  
[NASA-CASE-LAR-10180-1] c 06 N71-13461

Filter system for control of outgas contamination in vacuum Patent  
[NASA-CASE-MFS-14711] c 15 N71-26185

Constant temperature heat sink for calorimeters Patent  
[NASA-CASE-XMF-04208] c 33 N71-29051

Aldehyde-containing urea-absorbing polysaccharides  
[NASA-CASE-NPO-13620-1] c 27 N77-30236

Electromagnetic power absorber  
[NASA-CASE-NPO-13830-1] c 32 N80-14281

Water-absorbing capacitor system for measuring relative humidity  
[NASA-CASE-NPO-16544-1-CU] c 35 N87-22953

### ABSORPTION

Differential optoacoustic absorption detector  
[NASA-CASE-NPO-13759-1] c 74 N78-17867

Nebulization reflux concentrator  
[NASA-CASE-LAR-13254-1-CU] c 35 N86-29174

### ABSORPTION COOLING

Ten degree Kelvin hydride refrigerator  
[NASA-CASE-NPO-16393-1-CU] c 31 N87-21159

### ABSORPTION CROSS SECTIONS

Penetrating radiation system for detecting the amount of liquid in a tank Patent  
[NASA-CASE-MSC-12280] c 27 N71-16348

### ABSORPTION SPECTRA

Stark effect spectrophone for continuous absorption spectra monitoring — a technique for gas analysis  
[NASA-CASE-NPO-15102-1] c 25 N81-25159

Method and apparatus for enhancing laser absorption sensitivity  
[NASA-CASE-NPO-16567-1-CU] c 36 N87-28006

### ABSORPTION SPECTROSCOPY

Digital control of diode laser for atmospheric spectroscopy  
[NASA-CASE-NPO-16000-1] c 36 N85-29264

### ABSORPTIVITY

Detector absorptivity measuring method and apparatus  
[NASA-CASE-LAR-10907-1] c 35 N76-29551

Heat exchanger for electrothermal devices  
[NASA-CASE-LEW-14037-1] c 20 N87-16875

### AC GENERATORS

Signal generator  
[NASA-CASE-XNP-05612] c 09 N69-21468

Superconducting alternator  
[NASA-CASE-XLE-02824] c 03 N69-39890

Superconducting alternator Patent  
[NASA-CASE-XLE-02823] c 09 N71-23443

Electrical power generating system  
[NASA-CASE-MFS-25302-1] c 33 N83-28319

Coupling an induction motor type generator to ac power lines — making windmill generators compatible with public power lines  
[NASA-CASE-MFS-25302-2] c 33 N84-33660

### ACCELERATED LIFE TESTS

Predictive aging of polymers  
[NASA-CASE-NPO-17524-1-CU] c 27 N90-10261

### ACCELERATION

Single grid accelerator for an ion thruster  
[NASA-CASE-XLE-10453-2] c 28 N73-27699

### ACCELERATION (PHYSICS)

Centrifuge mounted motion simulator Patent  
[NASA-CASE-XAC-00399] c 11 N70-34815

Gravity device Patent  
[NASA-CASE-XMF-00424] c 11 N70-38196

Artificial gravity spin deployment system Patent  
[NASA-CASE-XNP-02595] c 31 N71-21881

Active vibration isolator for flexible bodies Patent  
[NASA-CASE-LAR-10106-1] c 15 N71-27169

Apparatus for applying simulator g-forces to an arm of an aircraft simulator pilot  
[NASA-CASE-LAR-10550-1] c 09 N74-30597

G-load measuring and indicator apparatus  
[NASA-CASE-ARC-10806-1] c 35 N75-29381

Helmet weight simulator  
[NASA-CASE-LAR-12320-1] c 54 N81-27806

### ACCELERATION PROTECTION

Universal pilot restraint suit and body support therefor Patent  
[NASA-CASE-XAC-00405] c 05 N70-41819

G conditioning suit Patent  
[NASA-CASE-XLA-02898] c 05 N71-20268

### ACCELERATION STRESSES (PHYSIOLOGY)

Artificial gravity spin deployment system Patent  
[NASA-CASE-XNP-02595] c 31 N71-21881

### ACCELERATION TOLERANCE

Peak acceleration limiter for vibrational tester Patent  
[NASA-CASE-NPO-10556] c 14 N71-27185

### ACCELERATORS

Annular arc accelerator shock tube  
[NASA-CASE-NPO-13528-1] c 09 N77-10071

Spring operated accelerator and constant force spring mechanism therefor  
[NASA-CASE-ARC-10898-1] c 35 N77-18417

**ACCELEROMETERS**  
Superconductive accelerometer Patent  
[NASA-CASE-XMF-01099] c 14 N71-15969  
Apparatus for controlling the velocity of an electromechanical drive for interferometers and the like Patent  
[NASA-CASE-XGS-03532] c 14 N71-17627  
Omnidirectional acceleration device Patent  
[NASA-CASE-HQN-10780] c 14 N71-30265  
Angular velocity and acceleration measuring apparatus  
[NASA-CASE-ERC-10292] c 14 N72-25410  
Temperature compensated digital inertial sensor --- circuit for maintaining inertial element of gyroscope or accelerometer at constant position  
[NASA-CASE-NPO-13044-1] c 35 N74-15094  
Accelerometer telemetry system  
[NASA-CASE-ARC-10849-1] c 17 N76-29347

**ACCEPTABILITY**  
Cross correlation anomaly detection system  
[NASA-CASE-NPO-13283] c 38 N78-17395

**ACCEPTOR MATERIALS**  
III-V photocathode with nitrogen doping for increased quantum efficiency  
[NASA-CASE-NPO-12134-1] c 33 N76-31409

**ACCESS CONTROL**  
Computer access security code system  
[NASA-CASE-NPO-17525-1-CU] c 60 N90-25583

**ACCIDENT PREVENTION**  
CAT altitude avoidance system  
[NASA-CASE-NPO-15351-1] c 06 N83-10040

**ACCOMMODATION**  
Visual accommodation trainer-tester  
[NASA-CASE-ARC-11426-1] c 09 N84-12193  
Visual accommodation trainer-tester  
[NASA-CASE-ARC-11426-2] c 52 N89-16256

**ACCUMULATORS**  
Direct radiation cooling of the collector of linear beam tubes  
[NASA-CASE-XNP-09227] c 15 N69-24319  
Small rocket engine Patent  
[NASA-CASE-XLE-00685] c 28 N70-41992  
Small plasma probe Patent  
[NASA-CASE-XLE-02578] c 25 N71-20747  
Electrostatic collector for charged particles  
[NASA-CASE-LEW-11192-1] c 09 N73-13208  
Accumulator  
[NASA-CASE-MFS-19287-1] c 34 N77-30399  
Method for fabricating solar cells having integrated collector grids  
[NASA-CASE-LEW-12819-2] c 44 N79-18444  
Urine collection device  
[NASA-CASE-MSC-16433-1] c 52 N81-24711  
Urine collection apparatus --- feminine hygiene  
[NASA-CASE-MSC-18381-1] c 52 N81-28740  
Sweat collection capsule  
[NASA-CASE-ARC-11031-1] c 52 N81-29763  
Multistage depressed collector for dual mode operation --- for microwave transmitting tubes  
[NASA-CASE-LEW-13282-1] c 33 N82-24415  
Multistage spent particle collector and a method for making same  
[NASA-CASE-LEW-13914-1] c 37 N85-33489

**ACETALS**  
Synthesis of polymeric Schiff bases by reaction of acetals and amine compounds Patent  
[NASA-CASE-XMF-08652] c 06 N71-11243

**ACETATES**  
Thermoplastic rubber comprising ethylene-vinyl acetate copolymer, asphalt and fluxing oil  
[NASA-CASE-NPO-08835-1] c 27 N78-33228

**ACETYL COMPOUNDS**  
Phenoxy resins containing pendent ethynyl groups and cured resins obtained therefrom  
[NASA-CASE-LAR-13262-1] c 23 N85-28973

**ACETYLENE**  
Dicyanoacetylene polymers Patent  
[NASA-CASE-XNP-03250] c 06 N71-23500  
Polyphenylquinoxalines containing pendant phenylethynyl and ethynyl groups --- for thermoplastic resins  
[NASA-CASE-LAR-12838-1] c 27 N83-34040  
Acetylene (ethynyl) terminated polyimide siloxane and process for preparation thereof  
[NASA-CASE-LAR-13318-1] c 27 N87-14516  
Ethynyl terminated ester oligomers and polymers therefrom  
[NASA-CASE-LAR-13118-2] c 27 N87-16907  
Acetylene terminated aspartimides and resins therefrom  
[NASA-CASE-LAR-14188-1] c 27 N90-23545

**ACOUSTIC ATTENUATION**

Ultrasonic calibration device --- for producing changes in acoustic attenuation and phase velocity  
[NASA-CASE-LAR-11435-1] c 35 N76-15432  
Acoustic guide for noise-transmission testing of aircraft  
[NASA-CASE-LAR-13111-1-CU] c 71 N87-21652  
Sound attenuation apparatus  
[NASA-CASE-LAR-13968-1] c 71 N90-15710

**ACOUSTIC DUCTS**

Noise suppressor --- for turbofan engine by incorporating annular acoustically porous elements in exhaust and inlet ducts  
[NASA-CASE-LAR-11141-1] c 07 N74-32418

**ACOUSTIC EMISSION**

Acoustic emission frequency discrimination  
[NASA-CASE-MSC-20467-1] c 35 N88-23966  
Impact tolerant material  
[NASA-CASE-LAR-12887-3] c 24 N90-21822

**ACOUSTIC EXCITATION**

Acoustic agglomeration methods and apparatus  
[NASA-CASE-NPO-15466-1] c 71 N85-22104

**ACOUSTIC IMPEDANCE**

Method for detecting hydrogen gas  
[NASA-CASE-XMF-03873] c 06 N69-39733  
Acoustic ground impedance meter  
[NASA-CASE-LAR-12995-1] c 35 N84-22933  
Reactanceless synthesized impedance bandpass amplifier  
[NASA-CASE-GSC-12788-1] c 33 N85-29145  
Method for thermal monitoring subcutaneous tissue  
[NASA-CASE-LAR-13028-1] c 52 N85-30618  
Impact tolerant material  
[NASA-CASE-LAR-12887-3] c 24 N90-21822

**ACOUSTIC LEVITATION**

Method and apparatus for shaping and enhancing acoustical levitation forces  
[NASA-CASE-MFS-25050-1] c 71 N81-15767  
Acoustic levitation methods and apparatus  
[NASA-CASE-NPO-15562-1] c 71 N82-27086  
Acoustic system for material transport  
[NASA-CASE-NPO-15453-1] c 71 N83-32515  
System for controlled acoustic rotation of objects  
[NASA-CASE-NPO-15522-1] c 71 N83-32516  
Acoustic suspension system  
[NASA-CASE-NPO-15435-1] c 71 N83-36846  
Contactless pellet fabrication  
[NASA-CASE-NPO-15592-1] c 71 N84-16940  
Acoustic rotation control  
[NASA-CASE-NPO-15689-1] c 71 N84-23233  
Sonic levitation apparatus  
[NASA-CASE-MFS-25828-1] c 71 N84-28568  
High temperature acoustic levitator  
[NASA-CASE-NPO-16022-1] c 71 N85-22105  
Gravity enhanced acoustic levitation method and apparatus  
[NASA-CASE-NPO-16147-1-CU] c 71 N85-29693  
Vibrating-chamber levitation systems  
[NASA-CASE-NPO-16142-1-CU] c 35 N86-20752  
Containerless high purity pulling process and apparatus for glass fiber  
[NASA-CASE-MFS-25905-2] c 31 N86-21718  
Apparatus for production of ultrapure amorphous metals utilizing acoustic cooling  
[NASA-CASE-NPO-15658-1] c 26 N86-32551  
Single mode levitation and translation  
[NASA-CASE-NPO-16675-1-CU] c 71 N88-24241  
Stabilization and oscillation of an acoustically levitated object  
[NASA-CASE-NPO-16896-1-CU] c 71 N89-13236  
Controlled sample orientation and rotation in an acoustic levitator  
[NASA-CASE-NPO-17086-1-CU] c 35 N89-14422  
Acoustic controlled rotation and orientation  
[NASA-CASE-NPO-16995-1-CU] c 71 N90-12289

**ACOUSTIC MEASUREMENT**

Instrumentation for measuring aircraft noise and sonic boom  
[NASA-CASE-LAR-11476-1] c 07 N76-27232  
Differential sound level meter  
[NASA-CASE-LAR-12106-1] c 71 N78-14867  
Pseudo continuous wave instrument --- ultrasonics  
[NASA-CASE-LAR-12260-1] c 35 N79-10390  
System for monitoring physical characteristics of fluids  
[NASA-CASE-NPO-15400-1] c 34 N83-31993  
Acoustic ground impedance meter  
[NASA-CASE-LAR-12995-1] c 35 N84-22933  
Rapid quantification of an internal property --- ultrasonic determination of bladder urine quantity  
[NASA-CASE-LAR-13689-1-NP] c 35 N87-23941  
Ultrasonic depth gauge for liquids under high pressure  
[NASA-CASE-LAR-13300-1-CU] c 35 N89-14407

**ACOUSTIC PROPAGATION**

Material suspension within an acoustically excited resonant chamber --- at near weightless conditions  
[NASA-CASE-NPO-13263-1] c 12 N75-24774

Resolution enhanced sound detecting apparatus  
[NASA-CASE-NPO-14134-1] c 71 N79-23753

**ACOUSTIC PROPERTIES**  
Wind tunnel microphone structure Patent  
[NASA-CASE-XNP-00250] c 11 N71-28779  
Acoustical transducer calibrating system and apparatus  
[NASA-CASE-FRC-10060-1] c 14 N73-27379  
Pseudo continuous wave instrument --- ultrasonics  
[NASA-CASE-LAR-12260-1] c 35 N79-10390  
Acoustic radiation stress measurement  
[NASA-CASE-LAR-13440-1] c 71 N87-21653

**ACOUSTICAL HOLOGRAPHY**  
Hybrid holographic non-destructive test system  
[NASA-CASE-MFS-23114-1] c 38 N78-32447

**ACOUSTICS**  
Image readout device with electronically variable spatial resolution  
[NASA-CASE-LAR-12633-1] c 33 N82-24416  
Acoustic rotation control  
[NASA-CASE-NPO-15689-1] c 71 N84-23233  
Acoustic particle separation  
[NASA-CASE-NPO-15559-1] c 71 N85-30765  
Sound attenuation apparatus  
[NASA-CASE-LAR-13968-1] c 71 N90-15710  
Acoustic convective system  
[NASA-CASE-LAR-12728-1-CU] c 31 N90-21215  
Method and apparatus for applying a mechanical force to surface  
[NASA-CASE-LAR-14009-1] c 37 N90-27115

**ACOUSTO-OPTICS**  
Apparatus for testing wiring harness by vibration generating means  
[NASA-CASE-MSC-15158-1] c 14 N72-17325  
Method and apparatus for background signal reduction in opto-acoustic absorption measurement  
[NASA-CASE-NPO-13683-1] c 35 N77-14411  
Differential optoacoustic absorption detector  
[NASA-CASE-NPO-13759-1] c 74 N78-17867  
Stark cell optoacoustic detection of constituent gases in sample  
[NASA-CASE-NPO-14143-1] c 25 N81-14015  
Stark effect spectrophone for continuous absorption spectra monitoring --- a technique for gas analysis  
[NASA-CASE-NPO-15102-1] c 25 N81-25159  
Coherently pulsed laser source  
[NASA-CASE-NPO-15111-1] c 36 N82-29589

**ACRYLATES**  
Ablative resin Patent  
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**ACRYLONITRILES**  
Method of carbonizing polyacrylonitrile fibers  
[NASA-CASE-ARC-11261-1] c 24 N83-25789

**ACTIVATED CARBON**  
Sewage sludge additive  
[NASA-CASE-NPO-13877-1] c 45 N82-11634

**ACTIVATION ENERGY**  
Heat activated cell Patent  
[NASA-CASE-LEW-11359] c 03 N71-28579  
Method of making emf cell  
[NASA-CASE-LEW-11359-2] c 03 N72-20034

**ACTIVE CONTROL**  
Smart tunnel: Docking mechanism  
[NASA-CASE-MSC-21360-1] c 18 N89-25263

**ACTUATION**  
Magnetically actuated compressor  
[NASA-CASE-GSC-12799-1] c 31 N85-21404

**ACTUATOR DISKS**  
Cryogenic gyroscope housing --- with annular disks for gas spin-up  
[NASA-CASE-MFS-21136-1] c 35 N74-18323

**ACTUATORS**  
Electromechanical actuator  
[NASA-CASE-XNP-05975] c 15 N69-23185  
Bimetallic power controlled actuator  
[NASA-CASE-XNP-09776] c 09 N69-39929  
Gas actuated bolt disconnect Patent  
[NASA-CASE-XLA-00326] c 03 N70-34667  
Hermetically sealed explosive release mechanism Patent  
[NASA-CASE-XGS-00824] c 15 N71-16078  
Burst diaphragm flow initiator Patent  
[NASA-CASE-MFS-12915] c 11 N71-17600  
Controllers Patent  
[NASA-CASE-XMS-07487] c 15 N71-23255  
Mechanical actuator Patent  
[NASA-CASE-XGS-04548] c 15 N71-24045  
Radiator deployment actuator Patent  
[NASA-CASE-MSC-11817-1] c 15 N71-26611  
Electromechanical control actuator system Patent  
[NASA-CASE-ERC-10022] c 15 N71-26635  
Energy limiter for hydraulic actuators Patent  
[NASA-CASE-ARC-10131-1] c 15 N71-27754  
Telemetry actuated switch  
[NASA-CASE-ARC-10105] c 09 N72-17153

- Mechanically actuated triggered hand  
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- Hermetically sealed elbow actuator  
[NASA-CASE-MFS-14710] c 09 N72-22195
- Ball screw linear actuator  
[NASA-CASE-NPO-11222] c 15 N72-25456
- Rotary actuator  
[NASA-CASE-NPO-10244] c 15 N72-26371
- Gas operated actuator  
[NASA-CASE-NPO-11340] c 15 N72-33477
- Redundant hydraulic control system for actuators  
[NASA-CASE-MFS-20944] c 15 N73-13466
- Electrolytic gas operated actuator  
[NASA-CASE-NPO-11389] c 15 N73-13467
- Manual actuator — for spacecraft exercising machines  
[NASA-CASE-MFS-21481-1] c 37 N74-18127
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### AIR LOCKS

- Spacecraft airlock Patent  
[NASA-CASE-XLA-02050] c 31 N71-22968
- Thruster maintenance system Patent  
[NASA-CASE-MFS-20325] c 28 N71-27095
- An airlock  
[NASA-CASE-MFS-20922] c 31 N72-20840
- Airlock  
[NASA-CASE-MFS-20922-1] c 18 N74-22136
- Apparatus for inserting and removing specimens from high temperature vacuum furnaces  
[NASA-CASE-LAR-10841-1] c 31 N74-27900

### AIR NAVIGATION

- Autonomous navigation system — gyroscopic pendulum for air navigation  
[NASA-CASE-ARC-11257-1] c 04 N81-21047
- Magnetic heading reference  
[NASA-CASE-LAR-12638-1] c 04 N84-14132

### AIR POLLUTION

- Analytical photoionization mass spectrometer with an argon gas filter between the light source and monochromator Patent  
[NASA-CASE-LAR-10180-1] c 06 N71-13461
- Separation nut Patent  
[NASA-CASE-XGS-01971] c 15 N71-15922
- Monitoring atmospheric pollutants with a heterodyne radiometer transmitter-receiver  
[NASA-CASE-NPO-11919-1] c 35 N74-11284
- Fluorescence detector for monitoring atmospheric pollutants  
[NASA-CASE-NPO-13231-1] c 45 N75-27585
- Stack plume visualization system  
[NASA-CASE-LAR-11675-1] c 45 N76-17656
- Indicator providing continuous indication of the presence of a specific pollutant in air  
[NASA-CASE-NPO-13474-1] c 45 N76-21742
- Method for detecting pollutants — through chemical reactions and heat treatment  
[NASA-CASE-LAR-11405-1] c 45 N76-31714
- Combustion engine — for air pollution control  
[NASA-CASE-NPO-13671-1] c 37 N77-31497
- Coal desulfurization process  
[NASA-CASE-NPO-13937-1] c 44 N78-31527
- A combined air and water pollution control system  
[NASA-CASE-NST-00007-1] c 45 N89-28967

### AIR PURIFICATION

- High pressure gas filter system Patent  
[NASA-CASE-MFS-12806] c 14 N71-17588
- Portable superclean air column device Patent  
[NASA-CASE-XMF-03212] c 15 N71-22721
- Cell and method for electrolysis of water and anode  
[NASA-CASE-MSC-16394-1] c 28 N81-24280

### AIR QUALITY

- Vapor fragrancier  
[NASA-CASE-LAR-13680-1] c 35 N87-25561

### AIR SAMPLING

- Aerodynamic measuring device Patent  
[NASA-CASE-XLA-00481] c 14 N70-36824
- Sampler of gas borne particles  
[NASA-CASE-NPO-13396-1] c 35 N76-18401
- Automated syringe sampler — remote sampling of air and water  
[NASA-CASE-LAR-12308-1] c 35 N81-29407
- Mobile sampler for use in acquiring samples of terrestrial atmospheric gases  
[NASA-CASE-NPO-15220-1] c 45 N83-25217

### AIR START

- Portable device for use in starting air-start-units for aircraft and having cable lead testing capability  
[NASA-CASE-FRC-10113-1] c 33 N80-26599

### AIR TRAFFIC CONTROL

- Traffic control system and method Patent  
[NASA-CASE-GSC-10087-1] c 02 N71-19287
- Satellite aided vehicle avoidance system Patent  
[NASA-CASE-ERC-10090] c 21 N71-24948
- Position location system and method  
[NASA-CASE-GSC-10087-3] c 07 N72-12080
- Video processor for air traffic control beacon system  
[NASA-CASE-KSC-11155-1] c 04 N86-19304

### AIR TRANSPORTATION

- Segmented tubular cushion springs and spring assembly  
[NASA-CASE-ARC-11349-1] c 37 N86-20797

### AIRBORNE EQUIPMENT

- Inflatable radar reflector unit Patent  
[NASA-CASE-XMS-00893] c 07 N70-40063
- Airborne tracking sunphotometer apparatus and system  
[NASA-CASE-ARC-11622-1] c 44 N88-14492

### AIRBORNE/SPACEBORNE COMPUTERS

- Ripple add and ripple subtract binary counters Patent  
[NASA-CASE-XGS-04766] c 08 N71-18602
- Shared memory for a fault-tolerant computer  
[NASA-CASE-NPO-13139-1] c 60 N76-21914

### AIRCRAFT

- System for indicating direction of intruder aircraft  
[NASA-CASE-ERC-10226-1] c 14 N73-16483
- Thin conformal antenna array for microwave power conversions  
[NASA-CASE-NPO-13886-1] c 32 N78-24391
- System for indicating fuel-efficient aircraft altitude  
[NASA-CASE-NPO-15351-2] c 06 N84-34443

### AIRCRAFT ACCIDENTS

- Satellite aided vehicle avoidance system Patent  
[NASA-CASE-ERC-10090] c 21 N71-24948

### AIRCRAFT ANTENNAS

- Spiral slotted phased antenna array  
[NASA-CASE-MSC-18532-1] c 32 N82-27558

### AIRCRAFT COMPARTMENTS

- Low density bismaleimide-carbon microballoon composites — aircraft and submarine compartment safety  
[NASA-CASE-ARC-11040-2] c 24 N78-27184

### AIRCRAFT CONFIGURATIONS

- Variable sweep wing configuration Patent  
[NASA-CASE-XLA-00230] c 02 N70-33255
- Television simulation for aircraft and space flight Patent  
[NASA-CASE-XFR-03107] c 09 N71-19449
- Dual-fuselage aircraft having yawable wing and horizontal stabilizer  
[NASA-CASE-ARC-10470-1] c 02 N73-26005
- Family of airfoil shapes for rotating blades — for increased power efficiency and blade stability  
[NASA-CASE-LAR-12843-1] c 02 N84-11136
- Actuated forebody strakes  
[NASA-CASE-LAR-13983-1] c 05 N90-23390

### AIRCRAFT CONSTRUCTION MATERIALS

- Fuselage structure using advanced technology fiber reinforced composites  
[NASA-CASE-LAR-11688-1] c 24 N82-26384
- Curved cap corrugated sheet  
[NASA-CASE-LAR-12884-1] c 18 N84-33450
- Aluminum alloy  
[NASA-CASE-LAR-13924-1-CU] c 26 N89-28621

### AIRCRAFT CONTROL

- Control for flexible parawing Patent  
[NASA-CASE-XLA-06958] c 02 N71-11038
- Attitude controls for VTOL aircraft Patent  
[NASA-CASE-XAC-08972] c 02 N71-20570
- Control device Patent  
[NASA-CASE-XAC-10019] c 15 N71-23809
- Direct lift control system Patent  
[NASA-CASE-LAR-10249-1] c 02 N71-26110
- High speed flight vehicle control Patent  
[NASA-CASE-XLA-08967] c 02 N71-27088
- Mechanically limited, electrically operated hydraulic valve system for aircraft controls Patent  
[NASA-CASE-XAC-00048] c 02 N71-29128
- Flight control system  
[NASA-CASE-MSC-13397-1] c 21 N72-25595
- Aircraft control system  
[NASA-CASE-ERC-10439] c 02 N73-19004
- Display system  
[NASA-CASE-ERC-10350] c 14 N73-20474
- Suppression of flutter  
[NASA-CASE-LAR-10682-1] c 02 N73-26004
- Integrated lift/drag controller for aircraft  
[NASA-CASE-ARC-10456-1] c 05 N75-12930
- High lift aircraft — with improved stability, control, performance, and noise characteristics  
[NASA-CASE-LAR-11252-1] c 05 N75-25914
- Filtering technique based on high-frequency plant modeling for high-gain control  
[NASA-CASE-LAR-12215-1] c 08 N79-23097
- Velocity vector control system augmented with direct lift control  
[NASA-CASE-LAR-12268-1] c 08 N81-24106
- Pitch attitude stabilization system utilizing engine pressure ratio feedback signals  
[NASA-CASE-LAR-12562-1] c 08 N81-26152
- Loading edge flap system for aircraft control augmentation  
[NASA-CASE-LAR-12787-2] c 08 N85-19985
- Airplane automatic control force trimming device for asymmetric engine failures  
[NASA-CASE-LAR-13280-1] c 08 N87-20999
- Aircraft control position indicator  
[NASA-CASE-LAR-12984-1] c 06 N87-22678

## AIRCRAFT INSTRUMENTS

- High performance forward swept wing aircraft  
[NASA-CASE-ARC-11638-1] c 05 N88-28914
- Actuated forebody strakes  
[NASA-CASE-LAR-13983-1] c 05 N90-23390

### AIRCRAFT DESIGN

- Supersonic aircraft Patent  
[NASA-CASE-XLA-04451] c 02 N71-12243
- Dual-fuselage aircraft having yawable wing and horizontal stabilizer  
[NASA-CASE-ARC-10470-1] c 02 N73-26005
- Multistage aerospace craft — perspective drawings of conceptual design  
[NASA-CASE-XMF-02263] c 05 N74-10907
- High lift aircraft — with improved stability, control, performance, and noise characteristics  
[NASA-CASE-LAR-11252-1] c 05 N75-25914
- Oblique-wing supersonic aircraft  
[NASA-CASE-ARC-10470-3] c 05 N76-29217
- Supersonic transport — using canard surfaces  
[NASA-CASE-LAR-11932-1] c 05 N78-32086
- Shapes for rotating airfoils  
[NASA-CASE-LAR-12396-1] c 02 N84-28732
- Geometries for roughness shapes in laminar flow  
[NASA-CASE-LAR-13255-1] c 02 N87-16793
- Multi-body aircraft with an all-movable center fuselage actively controlling fuselage pressure drag  
[NASA-CASE-LAR-13511-1] c 05 N88-23765
- Compression pylon  
[NASA-CASE-LAR-13777-1] c 05 N90-20078

### AIRCRAFT DETECTION

- Altitude measuring system  
[NASA-CASE-ERC-10412-1] c 09 N73-12211
- Apparatus for measuring an aircraft's speed and height  
[NASA-CASE-LAR-12275-1] c 35 N79-18296

### AIRCRAFT ENGINES

- Noise suppressor — for turbofan engine by incorporating annular acoustically porous elements in exhaust and inlet ducts  
[NASA-CASE-LAR-11141-1] c 07 N74-32418
- Dual cycle aircraft turbine engine  
[NASA-CASE-LAR-11310-1] c 07 N77-28118
- Portable device for use in starting air-start-units for aircraft and having cable lead testing capability  
[NASA-CASE-FRC-10113-1] c 33 N80-26599
- Aircraft engine nozzle  
[NASA-CASE-ARC-10977-1] c 07 N80-32392
- Diesel engine catalytic combustor system — aircraft engines  
[NASA-CASE-LEW-12995-1] c 37 N84-33808
- Elevated temperature aluminum alloys  
[NASA-CASE-LAR-13632-1] c 26 N87-29650

### AIRCRAFT EQUIPMENT

- Clear air turbulence detector  
[NASA-CASE-ERC-10081] c 14 N72-28437
- Air speed and attitude probe  
[NASA-CASE-FRC-11009-1] c 06 N80-18036
- Cooling system for high speed aircraft  
[NASA-CASE-LAR-12406-1] c 05 N81-26114
- System for providing an integrated display of instantaneous information relative to aircraft attitude, heading, altitude, and horizontal situation  
[NASA-CASE-FRC-11005-1] c 06 N82-16075
- Piezoelectric deicing device  
[NASA-CASE-LEW-13773-2] c 33 N86-20671
- Fire resistant polyamide based on 1-(diorganoxyphosphoryl)methyl-2,4- and -2,6-diamino benzene  
[NASA-CASE-ARC-11512-2] c 27 N86-32568
- Lightning discharge protection rod  
[NASA-CASE-LAR-13470-1] c 03 N88-14083
- Control surface actuator  
[NASA-CASE-LAR-12852-1] c 05 N89-11738

### AIRCRAFT FUEL SYSTEMS

- Oil cooling system for a gas turbine engine  
[NASA-CASE-LEW-12321-1] c 37 N78-10467

### AIRCRAFT GUIDANCE

- Terminal guidance system — for guiding aircraft into preselected altitude and/or heading at terminal point  
[NASA-CASE-FRC-10049-1] c 04 N74-13420
- Sun sensing guidance system for high altitude aircraft  
[NASA-CASE-FRC-11052-1] c 04 N82-23231

### AIRCRAFT HAZARDS

- Inlet deflector for jet engines Patent  
[NASA-CASE-XLE-00388] c 28 N70-34788

### AIRCRAFT HYDRAULIC SYSTEMS

- Gas turbine engine fuel control  
[NASA-CASE-LEW-11187-1] c 28 N73-19783
- Hydraulic actuator mechanism to control aircraft spoiler movements through dual input commands  
[NASA-CASE-LAR-12412-1] c 08 N82-24205
- Control surface actuator  
[NASA-CASE-LAR-12852-1] c 05 N89-11738

### AIRCRAFT INSTRUMENTS

- Airplane take-off performance indicator Patent  
[NASA-CASE-XLA-00100] c 14 N70-36807



- Aerodynamic measuring device Patent  
[NASA-CASE-XLA-00481] c 14 N70-36824
- Aircraft instrument Patent  
[NASA-CASE-XLA-00487] c 14 N70-40157
- Optical projector system Patent  
[NASA-CASE-XNP-03853] c 23 N71-21882
- Combined optical attitude and altitude indicating instrument Patent  
[NASA-CASE-XLA-01907] c 14 N71-23268
- Head-up attitude display  
[NASA-CASE-ERC-10392] c 21 N73-14692
- G-load measuring and indicator apparatus  
[NASA-CASE-ARC-10806-1] c 35 N75-29381
- Magnetic heading reference  
[NASA-CASE-LAR-11387-1] c 04 N76-20114
- Aircraft-mounted crash-activated transmitter device  
[NASA-CASE-MFS-16609-3] c 03 N76-32140
- Heads up display  
[NASA-CASE-LAR-12630-1] c 06 N84-27733
- System for indicating fuel-efficient aircraft altitude  
[NASA-CASE-NPO-15351-2] c 06 N84-34443
- AIRCRAFT LANDING**
- Landing arrangement for aerial vehicle Patent  
[NASA-CASE-XLA-00806] c 02 N70-34858
- Magnetic position detection method and apparatus  
[NASA-CASE-ARC-10179-1] c 21 N72-22619
- Integrated lift/drag controller for aircraft  
[NASA-CASE-ARC-10456-1] c 05 N75-12930
- Vehicle simulator binocular multiplanar visual display system  
[NASA-CASE-ARC-10808-1] c 09 N76-24280
- Full color hybrid display for aircraft simulators — landing aids  
[NASA-CASE-ARC-10903-1] c 09 N78-18083
- Environmental fog/rain visual display system for aircraft simulators  
[NASA-CASE-ARC-11158-1] c 09 N82-24212
- Airplane takeoff and landing performance monitoring system  
[NASA-CASE-LAR-13734-1-CU] c 09 N90-20096
- AIRCRAFT LAUNCHING DEVICES**
- Rotating launch device for a remotely piloted aircraft  
[NASA-CASE-ARC-10979-1] c 09 N77-19076
- AIRCRAFT MANEUVERS**
- G-load measuring and indicator apparatus  
[NASA-CASE-ARC-10806-1] c 35 N75-29381
- AIRCRAFT MODELS**
- Test unit free-flight suspension system Patent  
[NASA-CASE-XLA-00939] c 11 N71-15926
- Variable geometry wind tunnels  
[NASA-CASE-XLA-07430] c 11 N72-22246
- Deploy/release system — model aircraft flight control  
[NASA-CASE-LAR-11575-1] c 02 N78-16014
- AIRCRAFT NOISE**
- Instrumentation for measuring aircraft noise and sonic boom  
[NASA-CASE-LAR-11476-1] c 07 N76-27232
- Acoustic guide for noise-transmission testing of aircraft  
[NASA-CASE-LAR-13111-1-CU] c 71 N87-21652
- AIRCRAFT PERFORMANCE**
- Ferry system  
[NASA-CASE-LAR-10574-1] c 11 N73-13257
- Airplane runway performance monitoring system  
[NASA-CASE-LAR-13854-1-CU] c 04 N88-24621
- High performance forward swept wing aircraft  
[NASA-CASE-ARC-11636-1] c 05 N88-28914
- Method and system for monitoring and displaying engine performance parameters  
[NASA-CASE-LAR-14049-1] c 07 N89-23466
- Airplane takeoff and landing performance monitoring system  
[NASA-CASE-LAR-13734-1-CU] c 09 N90-20096
- AIRCRAFT PILOTS**
- Apparatus for applying simulator g-forces to an arm of an aircraft simulator pilot  
[NASA-CASE-LAR-10550-1] c 09 N74-30597
- AIRCRAFT SAFETY**
- Airplane take-off performance indicator Patent  
[NASA-CASE-XLA-00100] c 14 N70-36807
- Display research collision warning system  
[NASA-CASE-HQN-10703] c 21 N73-13643
- Deployable flexible ventral fins for use as an emergency spin recovery device in aircraft  
[NASA-CASE-LAR-10753-1] c 08 N74-30421
- Fire blocking systems for aircraft seat cushions  
[NASA-CASE-ARC-11423-1] c 03 N84-33394
- Variable response load limiting device  
[NASA-CASE-LAR-12801-1] c 37 N88-23982
- AIRCRAFT SPIN**
- Extended moment arm anti-spin device  
[NASA-CASE-LAR-12979-1] c 05 N85-21147
- Dual towline spin-recovery device  
[NASA-CASE-LAR-13076-1] c 08 N85-35200

**AIRCRAFT STABILITY**

- Mechanical stability augmentation system Patent  
[NASA-CASE-XLA-06339] c 02 N71-13422
- Suppression of flutter  
[NASA-CASE-LAR-10682-1] c 02 N73-26004
- High performance forward swept wing aircraft  
[NASA-CASE-ARC-11636-1] c 05 N88-28914
- AIRCRAFT STRUCTURES**
- Fatigue testing device Patent  
[NASA-CASE-XLA-02131] c 32 N70-42003
- Heat flux measuring system Patent  
[NASA-CASE-XFR-03802] c 33 N71-23085
- Three-axis adjustable loading structure  
[NASA-CASE-FRC-10051-1] c 35 N74-13129
- Transparent fire resistant polymeric structures  
[NASA-CASE-ARC-10813-1] c 27 N76-16230
- Wingtip vortex dissipator for aircraft  
[NASA-CASE-LAR-11645-1] c 02 N77-10001
- Aircraft canopy lock  
[NASA-CASE-FRC-11065-1] c 05 N83-19737
- Metal matrix composite structural panel construction  
[NASA-CASE-LAR-12807-1] c 24 N84-11214
- Elastomer toughened polyimide adhesives — bonding metal and composite material structures for aircraft and spacecraft  
[NASA-CASE-LAR-12775-2] c 27 N85-21349
- Optimized bolted joint  
[NASA-CASE-LAR-13250-1] c 37 N86-27630
- Fire resistant polyamide based on 1-(diorganoxyphosphonyl)methyl-2,4- and -2,6-diamino benzene  
[NASA-CASE-ARC-11512-2] c 27 N86-32568
- The 1-(diorganoxy phosphonyl) methyl-2,4- and -2,6-diamino benzenes and their derivatives  
[NASA-CASE-ARC-11425-2] c 23 N87-28605
- Elevated temperature aluminum alloys  
[NASA-CASE-LAR-13632-1] c 26 N87-29650
- Some 1-(diorganoxyphosphonyl)methyl-2,4- and -2,6-dinitro-benzenes  
[NASA-CASE-ARC-11425-3] c 23 N90-23475
- AIRCRAFT TIRES**
- Tire/wheel concept  
[NASA-CASE-LAR-11695-2] c 37 N81-24443
- AIRCRAFT WAKES**
- System for use in conducting wake investigation for a wing in flight — differential pressure measurements for drag investigations  
[NASA-CASE-FRC-11024-1] c 02 N80-28300
- AIRFOIL PROFILES**
- Family of airfoil shapes for rotating blades — for increased power efficiency and blade stability  
[NASA-CASE-LAR-12843-1] c 02 N84-11138
- AIRFOILS**
- Minimum induced drag airfoil body Patent  
[NASA-CASE-XLA-00755] c 01 N71-13410
- Minimum induced drag airfoil body Patent  
[NASA-CASE-XLA-05828] c 01 N71-13411
- Wind tunnel  
[NASA-CASE-LAR-10135-1] c 09 N79-21083
- Surface finishing  
[NASA-CASE-MSC-12631-3] c 27 N81-14077
- Aircraft rotor blade with passive tuned tab  
[NASA-CASE-ARC-11444-1] c 05 N85-29947
- Airfoil flutter model suspension system  
[NASA-CASE-LAR-13522-1-SB] c 09 N87-25334
- Porous plug for reducing orifice induced pressure error in airfoils  
[NASA-CASE-LAR-13569-1] c 35 N89-12841
- High lift, low pitching moment airfoils  
[NASA-CASE-LAR-13215-1] c 02 N89-14224
- AIRFRAMES**
- Dual-fuselage aircraft having yawable wing and horizontal stabilizer  
[NASA-CASE-ARC-10470-1] c 02 N73-26005
- Cooling system for high speed aircraft  
[NASA-CASE-LAR-12406-1] c 05 N81-26114
- Explosively activated aegress area  
[NASA-CASE-LAR-12624-1] c 01 N83-35992
- AIRSPREAD**
- Landing arrangement for aerial vehicle Patent  
[NASA-CASE-XLA-00806] c 02 N70-34858
- Apparatus for measuring an aircraft's speed and height  
[NASA-CASE-LAR-12275-1] c 35 N79-18296
- Air speed and attitude probe  
[NASA-CASE-FRC-11009-1] c 06 N80-18036
- Miniature electrooptical air flow sensor  
[NASA-CASE-LAR-13065-1] c 35 N85-20295
- ALBUMINS**
- Human serum albumin crystals and method of preparation  
[NASA-CASE-MFS-28234-1] c 52 N90-20616
- ALCOHOLS**
- Trifunctional alcohol  
[NASA-CASE-NPO-10714] c 06 N69-31244

- Laser coolant and ultraviolet filter  
[NASA-CASE-MFS-20180] c 16 N72-12440
- Alkaline battery containing a separator of a cross-linked copolymer of vinyl alcohol and unsaturated carboxylic acid  
[NASA-CASE-LEW-13102-1] c 33 N85-29144
- ALDEHYDES**
- Direct synthesis of polymeric schiff bases from two amines and two aldehydes Patent  
[NASA-CASE-XMF-08655] c 06 N71-11239
- Azine polymers and process for preparing the same Patent  
[NASA-CASE-XMF-08656] c 06 N71-11242
- Aromatic diamine-aromatic dialdehyde high molecular weight Schiff base polymers prepared in a monofunctional Schiff base Patent  
[NASA-CASE-XMF-03074] c 06 N71-24740
- Nuclear alkylated pyridine aldehyde polymers and conductive compositions thereof  
[NASA-CASE-NPO-10557] c 27 N78-17214
- Polyvinyl alcohol cross-linked with two aldehydes  
[NASA-CASE-LEW-13504-1] c 25 N83-13188
- ALGORITHMS**
- Systolic VLSI array for implementing the Kalman filter algorithm  
[NASA-CASE-NPO-17108-1-CU] c 33 N89-28713
- Multi-stage estimation of received carrier signal parameters under very high dynamic conditions of the receiver  
[NASA-CASE-NPO-17911-1-CU] c 32 N90-27016
- Modified fast frequency acquisition via adaptive least squares algorithm  
[NASA-CASE-NPO-17845-1-CU] c 61 N90-27341
- ALIGNMENT**
- Instrument support with precise lateral adjustment Patent  
[NASA-CASE-XMF-00480] c 14 N70-39898
- Portable alignment tool Patent  
[NASA-CASE-XMF-01452] c 15 N70-41371
- Optical alignment system Patent  
[NASA-CASE-XNP-02029] c 14 N70-41955
- Trigonometric vehicle guidance assembly which aligns the three perpendicular axes of two three-axes systems Patent  
[NASA-CASE-XMF-00684] c 21 N71-21688
- Aligning and positioning device Patent  
[NASA-CASE-XMS-04178] c 15 N71-22798
- Method and apparatus for aligning a laser beam projector Patent  
[NASA-CASE-NPO-11087] c 23 N71-29125
- Roll alignment detector  
[NASA-CASE-GSC-10514-1] c 14 N72-20379
- Zero gravity shadow shield aligner  
[NASA-CASE-KSC-10622-1] c 31 N72-21893
- Alignment apparatus using a laser having a gravitationally sensitive cavity reflector  
[NASA-CASE-ARC-10444-1] c 16 N73-33397
- Spacecraft docking and alignment system — using television camera system  
[NASA-CASE-MSC-12559-1] c 18 N76-14186
- Method of constructing dish ion thruster grids to provide hole array spacing compensation  
[NASA-CASE-LEW-11876-1] c 20 N76-21276
- Optical alignment device  
[NASA-CASE-ARC-10932-1] c 74 N76-22993
- Precision alignment apparatus for cutting a workpiece  
[NASA-CASE-LAR-11658-1] c 37 N77-14478
- Guide for a typewriter  
[NASA-CASE-MFS-15218-1] c 37 N77-19457
- Rotary target V-block  
[NASA-CASE-LAR-12007-3] c 35 N84-16523
- Ingot slicing machine and method  
[NASA-CASE-NPO-15483-1] c 37 N85-21650
- X-ray determination of parts alignment  
[NASA-CASE-MSC-20418-1] c 74 N86-20126
- Simulator scene display evaluation device  
[NASA-CASE-ARC-11504-1] c 09 N86-32447
- Adjustable mount for electro-optic transducers in an evacuated cryogenic system  
[NASA-CASE-LAR-13100-1] c 37 N87-23982
- Alignment and assembly tool for very large diameter cylinders  
[NASA-CASE-MFS-28001-2] c 37 N88-14360
- Improved docking alignment system  
[NASA-CASE-MSC-21372-1] c 35 N89-12842
- Space module assembly apparatus with docking alignment flexibility and restraint  
[NASA-CASE-MSC-21211-1] c 18 N89-28553
- Mechanical strain isolator mount  
[NASA-CASE-LAR-13580-1] c 37 N90-16272
- Tensile film clamps and mounting block for the rheovibron and autovibron viscoelastometer  
[NASA-CASE-LAR-13696-1] c 37 N90-20409
- Induction-type metal detector with increased scanning area capability  
[NASA-CASE-KSC-11386-1] c 35 N90-22023

- Alignment positioning mechanism  
[NASA-CASE-MSC-21502-1] c 37 N90-26341
- Quick connect coupling  
[NASA-CASE-MSC-21539-1] c 37 N90-27111
- ALKALI HALIDES**
- Fire extinguishant materials  
[NASA-CASE-ARC-11252-1] c 25 N83-36118
- ALKALI METALS**
- Alkali-metal silicate protective coating  
[NASA-CASE-XGS-04119] c 18 N89-39879
- Analytical test apparatus and method for determining oxide content of alkali metal Patent  
[NASA-CASE-XLE-01997] c 06 N71-23527
- Alkali metal silicate protective coating Patent  
[NASA-CASE-XGS-04799] c 18 N71-24183
- Heat activated cell with alkali anode and alkali salt electrolyte Patent  
[NASA-CASE-LEW-11358] c 03 N71-26084
- Preparation of alkali metal dispersions  
[NASA-CASE-XNP-08876] c 17 N73-28573
- Process for preparing higher oxides of the alkali and alkaline earth metals  
[NASA-CASE-ARC-10992-1] c 26 N78-32229
- Alkali-metal silicate binders and methods of manufacture  
[NASA-CASE-GSC-12303-1] c 24 N79-31347
- Heat pipes containing alkali metal working fluid  
[NASA-CASE-LEW-12253-1] c 74 N83-19596
- Fire extinguishant materials  
[NASA-CASE-ARC-11252-1] c 25 N83-36118
- ALKALINE BATTERIES**
- Method for determining the state of charge of batteries by the use of tracers Patent  
[NASA-CASE-XNP-01464] c 03 N71-10728
- Electrochemical coulometer and method of forming same Patent  
[NASA-CASE-XGS-05434] c 03 N71-20491
- Electrocatalyst for oxygen reduction  
[NASA-CASE-HQN-10537-1] c 06 N72-10138
- Inorganic-organic separators for alkaline batteries  
[NASA-CASE-LEW-12649-1] c 44 N78-25530
- Polyvinyl alcohol battery separator containing inert filler — alkaline batteries  
[NASA-CASE-LEW-13556-1] c 44 N81-27615
- Process of treating cellulosic membrane and alkaline with membrane separator  
[NASA-CASE-GSC-10019-1] c 44 N82-24641
- Separator for alkaline batteries and method of making same  
[NASA-CASE-GSC-10350-1] c 44 N82-24642
- Separator for alkaline electric cells and method of making  
[NASA-CASE-GSC-10017-1] c 44 N82-24643
- Separator for alkaline electric batteries and method of making  
[NASA-CASE-GSC-10018-1] c 44 N82-24644
- Aqueous alkali metal hydroxide insoluble cellulose ether membrane  
[NASA-CASE-XGS-05584-1] c 25 N82-29370
- Advanced inorganic separators for alkaline batteries  
[NASA-CASE-LEW-13171-1] c 44 N82-29708
- Advanced inorganic separators for alkaline batteries and method of making the same  
[NASA-CASE-LEW-13171-2] c 44 N83-32176
- Additive for zinc electrodes — electric automobiles  
[NASA-CASE-LEW-13286-1] c 33 N84-14422
- Alkaline battery containing a separator of a cross-linked copolymer of vinyl alcohol and unsaturated carboxylic acid  
[NASA-CASE-LEW-13102-1] c 33 N85-29144
- ALKALINE EARTH OXIDES**
- Process for preparing higher oxides of the alkali and alkaline earth metals  
[NASA-CASE-ARC-10992-1] c 26 N78-32229
- ALKYL COMPOUNDS**
- Fluorohydroxy ethers  
[NASA-CASE-MFS-10507] c 06 N73-30101
- Process for preparing perfluorotriazine elastomers and precursors thereof  
[NASA-CASE-ARC-11402-1] c 27 N84-22744
- Boron-containing organosilane polymers and ceramic materials thereof  
[NASA-CASE-ARC-11649-2-SB] c 27 N90-21177
- Some 1-(diorganooxyphosphonyl)methyl-2,4- and -2,6-dinitro-benzenes  
[NASA-CASE-ARC-11425-3] c 23 N90-23475
- ALKYNES**
- High performance channel injection sealant invention abstract  
[NASA-CASE-ARC-14408-1] c 27 N82-33523
- ALLOYS**
- Brazing alloy Patent  
[NASA-CASE-XNP-03063] c 17 N71-23365
- Alloys for bearings Patent  
[NASA-CASE-XLE-05033] c 15 N71-23810
- Process for applying black coating to metals Patent  
[NASA-CASE-XLA-06199] c 15 N71-24875
- Adjustable mount for a trihedral mirror Patent  
[NASA-CASE-XNP-08907] c 23 N71-29123
- Enhanced diffusion welding  
[NASA-CASE-LEW-11388-1] c 15 N73-32358
- Brazing alloy binder  
[NASA-CASE-XMF-05868] c 26 N75-27125
- Brazing alloy  
[NASA-CASE-XNP-03878] c 26 N75-27127
- Castable hot corrosion resistant alloy  
[NASA-CASE-LEW-14134-2] c 26 N89-14303
- Solidification processing of alloys using an applied electric field  
[NASA-CASE-MFS-26083-1-CU] c 26 N90-26940
- ALPHA PARTICLES**
- Method and means for helium/hydrogen ratio measurement by alpha scattering  
[NASA-CASE-NPO-14078-1] c 25 N80-20334
- ALPHANUMERIC CHARACTERS**
- X-Y alphanumeric character generator for oscilloscopes  
[NASA-CASE-GSC-11582-1] c 33 N75-19517
- ALTERNATING CURRENT**
- Ac power amplifier Patent Application  
[NASA-CASE-LAR-10218-1] c 09 N70-34559
- Frequency control network for a current feedback oscillator Patent  
[NASA-CASE-GSC-10041-1] c 10 N71-19418
- Blood pressure measuring system for separating and separately recording dc signal and an ac signal Patent  
[NASA-CASE-XMS-06061] c 05 N71-23317
- Switching circuit Patent  
[NASA-CASE-XNP-06505] c 10 N71-24799
- Pulse width inverter Patent  
[NASA-CASE-MFS-10068] c 10 N71-25139
- Inverter with means for base current shaping for sweeping charge carriers from base region Patent  
[NASA-CASE-XGS-06226] c 10 N71-25950
- A dc to ac to dc converter having transistor synchronous rectifiers  
[NASA-CASE-GSC-11126-1] c 09 N72-25253
- Phase protection system for ac power lines  
[NASA-CASE-MSC-17832-1] c 33 N74-14956
- Solar cell system having alternating current output  
[NASA-CASE-LEW-12806-2] c 44 N81-12542
- Power factor control system for ac induction motors  
[NASA-CASE-MFS-23988-1] c 33 N81-27395
- Non-contacting power transfer device  
[NASA-CASE-GSC-12595-1] c 33 N82-24422
- Motor power control circuit for ac induction motors  
[NASA-CASE-MFS-25323-1] c 33 N84-22886
- Coupling an induction motor type generator to ac power lines — making windmill generators compatible with public power lines  
[NASA-CASE-MFS-25302-2] c 33 N84-33660
- Three-phase power factor controller with induced EMF sensing  
[NASA-CASE-MFS-25852-1] c 33 N84-33661
- Power control for ac motor  
[NASA-CASE-MFS-25861-1] c 33 N85-22877
- Induction heating gun  
[NASA-CASE-LAR-13181-1] c 31 N85-29083
- ALTIMETERS**
- Echo tracker/range finder for radars and sonars  
[NASA-CASE-NPO-14361-1] c 32 N82-23376
- ALTITUDE**
- Combined optical attitude and altitude indicating instrument Patent  
[NASA-CASE-XLA-01907] c 14 N71-23268
- ALTITUDE CONTROL**
- Check valve assembly for a probe Patent  
[NASA-CASE-XLA-00128] c 15 N70-37925
- ALUMINUM**
- Method of joining aluminum to stainless steel Patent  
[NASA-CASE-MFS-07369] c 15 N71-20443
- Thermal control coating Patent  
[NASA-CASE-XLA-01995] c 18 N71-23047
- Etching of aluminum for bonding Patent  
[NASA-CASE-XMF-02303] c 17 N71-23828
- Process for producing dispersion strengthened nickel with aluminum Patent  
[NASA-CASE-XLE-06969] c 17 N71-24142
- Plating nickel on aluminum castings Patent  
[NASA-CASE-XNP-04148] c 17 N71-24830
- Method of plating copper on aluminum Patent  
[NASA-CASE-XLA-08966-1] c 17 N71-25903
- Heat activated cell Patent  
[NASA-CASE-LEW-11359] c 03 N71-28579
- Method of making emf cell  
[NASA-CASE-LEW-11359-2] c 03 N72-20034
- Method of preparing graphite reinforced aluminum composite  
[NASA-CASE-MFS-21077-1] c 24 N75-28135
- Method of fluxless brazing and diffusion bonding of aluminum containing components  
[NASA-CASE-MSC-14435-1] c 37 N76-18455
- Method for making an aluminum or copper substrate panel for selective absorption of solar energy  
[NASA-CASE-MFS-23518-1] c 44 N79-11469
- Recovery of aluminum from composite propellants  
[NASA-CASE-NPO-14110-1] c 28 N81-15119
- Variable anodic thermal control coating  
[NASA-CASE-LAR-12719-1] c 44 N83-34449
- Oxygen diffusion barrier coating  
[NASA-CASE-LAR-13474-1-SB] c 26 N87-25455
- ALUMINUM ALLOYS**
- Low temperature aluminum alloy Patent  
[NASA-CASE-XMF-02786] c 17 N71-20743
- Etching of aluminum for bonding Patent  
[NASA-CASE-XMF-02303] c 17 N71-23828
- Method of producing complex aluminum alloy parts of high temper, and products thereof  
[NASA-CASE-MSC-19693-1] c 26 N78-24333
- Nicral ternary alloy having improved cyclic oxidation resistance  
[NASA-CASE-LEW-13339-1] c 26 N82-31505
- Metal matrix composite structural panel construction  
[NASA-CASE-LAR-12807-1] c 24 N84-11214
- Elevated temperature aluminum alloys  
[NASA-CASE-LAR-13632-1] c 26 N87-29650
- Aluminum alloy  
[NASA-CASE-LAR-13924-1-CU] c 26 N89-28621
- ALUMINUM COATINGS**
- Nickel aluminate coated low alloy stainless steel  
[NASA-CASE-LEW-11267-1] c 17 N73-32414
- Preparing oxidizer coated metal fuel particles  
[NASA-CASE-NPO-11975-1] c 28 N74-33209
- Method of protecting the surface of a substrate — by applying aluminate coating  
[NASA-CASE-LEW-11696-1] c 37 N75-13261
- Duplex aluminized coatings  
[NASA-CASE-LEW-11696-2] c 26 N75-19408
- Meteoroid impact position locator aid for manned space station  
[NASA-CASE-LAR-10629-1] c 35 N75-33367
- Method of protecting a surface with a silicon-slurry/aluminate coating — coatings for gas turbine engine blades and vanes  
[NASA-CASE-LEW-13343-1] c 27 N82-28441
- Silicon-slurry/aluminate coating — protecting gas turbine engine vanes and blades  
[NASA-CASE-LEW-13343] c 26 N83-31795
- ALUMINUM COMPOUNDS**
- Synthesis of dawsonites — for use in fire extinguishing operations  
[NASA-CASE-ARC-11326-1] c 25 N83-33977
- Fire extinguishant materials  
[NASA-CASE-ARC-11252-1] c 25 N83-36118
- ALUMINUM OXIDES**
- Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-1] c 37 N75-15992
- Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-3] c 24 N79-25143
- Method and technique for installing light-weight, fragile, high-temperature fiber insulation  
[NASA-CASE-MSC-16934-3] c 24 N84-16262
- ALUMINUM SILICATES**
- Inorganic thermal control pigment Patent  
[NASA-CASE-XNP-02139] c 18 N71-24184
- AMBIENT TEMPERATURE**
- High stability amplifier  
[NASA-CASE-GSC-12646-1] c 33 N83-34191
- AMBIGUITY**
- Phase ambiguity resolution for offset QPSK modulation systems  
[NASA-CASE-NPO-17853-1-CU] c 32 N90-16975
- AMIDES**
- Preparation of heterocyclic block copolymer omega-diamidoximes  
[NASA-CASE-ARC-11060-1] c 27 N79-22300
- Method for preparing addition type polyimide prepreps  
[NASA-CASE-LAR-12054-2] c 27 N81-14078
- AMINES**
- Direct synthesis of polymeric schiff bases from two amines and two aldehydes Patent  
[NASA-CASE-XMF-08655] c 06 N71-11239
- Synthesis of polymeric schiff bases by reaction of acetals and amine compounds Patent  
[NASA-CASE-XMF-08652] c 06 N71-11243
- Polyimide foam for the thermal insulation and fire protection  
[NASA-CASE-ARC-10464-1] c 27 N74-12812
- Automated analysis of oxidative metabolites  
[NASA-CASE-ARC-10469-1] c 25 N75-12086
- Preparation of perfluorinated 1,2,4-oxadiazoles  
[NASA-CASE-ARC-11267-2] c 23 N82-28353

Method of neutralizing the corrosive surface of amine-cured epoxy resins  
[NASA-CASE-GSC-12686-1] c 27 N83-34039  
Metal (2,4,4',4'') phthalocyanine tetraamines as curing agents for epoxy resins  
[NASA-CASE-ARC-11424-1] c 27 N85-34281  
Laminate comprising fibers embedded in cured amine terminated bis-imide  
[NASA-CASE-ARC-11421-3] c 24 N86-25416  
Amine terminated bispartimide polymer  
[NASA-CASE-ARC-11421-2] c 27 N86-31726  
Aminophenoxycyclophosphazene cured epoxy resins and the composites, laminates, adhesives and structures thereof  
[NASA-CASE-ARC-11548-1] c 27 N87-25469  
Aromatic cyclophosphazenes  
[NASA-CASE-ARC-11428-3] c 23 N88-24692

**AMINO ACIDS**

Amino acid analysis  
[NASA-CASE-NPO-12130-1] c 25 N75-14844

**AMMONIA**

Solid state chemical source for ammonia beam maser Patent  
[NASA-CASE-XGS-01504] c 16 N70-41578

**AMMONIUM NITRATES**

High performance ammonium nitrate propellant  
[NASA-CASE-NPO-14260-1] c 28 N79-28342

**AMMONIUM PERCHLORATES**

Ammonium perchlorate composite propellant containing an organic transitional metal chelate catalytic additive Patent  
[NASA-CASE-LAR-10173-1] c 27 N71-14090  
Process for the leaching of AP from propellant  
[NASA-CASE-NPO-14109-1] c 28 N80-23471

**AMORPHOUS MATERIALS**

Corrosion resistant coating  
[NASA-CASE-NPO-15928-1] c 26 N85-29005  
Apparatus for production of ultrapure amorphous metals utilizing acoustic cooling  
[NASA-CASE-NPO-15658-1] c 26 N86-32551  
Oxygen diffusion barrier coating  
[NASA-CASE-LAR-13474-1-SB] c 26 N87-25455

**AMPLIFICATION**

Amplifier drift tester  
[NASA-CASE-XMS-05562-1] c 09 N69-39986  
Amplifier clamping circuit for horizon scanner Patent  
[NASA-CASE-XGS-01784] c 10 N71-20782  
Diversity receiving system with diversity phase lock Patent  
[NASA-CASE-XGS-01222] c 10 N71-20841  
Active RC networks  
[NASA-CASE-ARC-10042-2] c 10 N72-11256  
High voltage transistor amplifier with constant current load  
[NASA-CASE-NPO-11023] c 09 N72-17155  
Independent gain and bandwidth control of a traveling wave maser  
[NASA-CASE-NPO-13801-1] c 36 N78-18410  
Pseudonoise code tracking loop  
[NASA-CASE-MS-18035-1] c 32 N81-15179  
Automatic level control circuit  
[NASA-CASE-KSC-11170-1] c 33 N83-36356

**AMPLIFIER DESIGN**

Automatic gain control system  
[NASA-CASE-XMS-05307] c 09 N69-24330  
Bio-isolated dc operational amplifier — for bioelectric measurements  
[NASA-CASE-ARC-10596-1] c 33 N74-21851  
High power metallic halide laser — amplifying a copper chloride laser  
[NASA-CASE-NPO-14782-1] c 36 N82-28616  
Reactanceless synthesized impedance bandpass amplifier  
[NASA-CASE-GSC-12788-1] c 33 N85-29145  
Amplifier for measuring low-level signals in the presence of high common mode voltage  
[NASA-CASE-MFS-25868-1] c 33 N86-20670  
Low phase noise oscillator using two parallel connected amplifiers  
[NASA-CASE-GSC-13018-1] c 33 N87-21232

**AMPLIFIERS**

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[NASA-CASE-XGS-02812] c 09 N71-19466  
Method and apparatus for continuously monitoring blood oxygenation, blood pressure, pulse rate and the pressure pulse curve utilizing an ear oximeter as transducer Patent  
[NASA-CASE-XAC-05422] c 04 N71-23185  
High-gain, broadband traveling wave maser Patent  
[NASA-CASE-NPO-10548] c 16 N71-24831  
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[NASA-CASE-XFR-07172] c 05 N71-27234  
Transient augmentation circuit for pulse amplifiers Patent  
[NASA-CASE-XNP-01068] c 10 N71-28739

RC networks and amplifiers employing the same  
[NASA-CASE-XAC-05462-2] c 10 N72-17171  
Full wave modulator-demodulator amplifier apparatus — for generating rectified output signal  
[NASA-CASE-FRC-10072-1] c 33 N74-14939  
Automatic focus control for facsimile cameras  
[NASA-CASE-LAR-11213-1] c 35 N75-15014  
Reflected-wave maser — low noise amplifier  
[NASA-CASE-NPO-13490-1] c 36 N76-31512  
High stability amplifier  
[NASA-CASE-GSC-12646-1] c 33 N83-34191  
Low noise tuned amplifier  
[NASA-CASE-GSC-12567-1] c 33 N84-22887  
Low phase noise oscillator using two parallel connected amplifiers  
[NASA-CASE-GSC-13018-1] c 33 N87-21232  
Programmable electronic synthesized capacitance  
[NASA-CASE-GSC-12961-1] c 33 N87-22895  
Integrated photo-responsive metal oxide semiconductor circuit  
[NASA-CASE-GSC-12782-1] c 33 N88-14271

**AMPLITUDE DISTRIBUTION ANALYSIS**

System for monitoring signal amplitude ranges  
[NASA-CASE-XMS-04061-1] c 09 N69-39885  
Single or joint amplitude distribution analyzer Patent  
[NASA-CASE-XNP-01383] c 09 N71-10659  
Analog-to-digital converter  
[NASA-CASE-XNP-00477] c 08 N73-28045

**AMPLITUDE MODULATION**

Signal generator  
[NASA-CASE-XNP-05612] c 09 N69-21468  
Demodulation system Patent  
[NASA-CASE-XAC-04030] c 10 N71-19472  
Amplitude modulated laser transmitter Patent  
[NASA-CASE-XMS-04269] c 16 N71-22895  
Vibrating element electrometer with output signal magnified over input signal by a function of the mechanical Q of the vibrating element Patent  
[NASA-CASE-XAC-02807] c 09 N71-23021  
Phase multiplying electronic scanning system Patent  
[NASA-CASE-NPO-10302] c 10 N71-26142  
Signal path series step biased multidevice high efficiency amplifier Patent  
[NASA-CASE-GSC-10668-1] c 07 N71-28430  
Gated compressor, distortionless signal limiter  
[NASA-CASE-NPO-11820-1] c 32 N74-19788  
Amplitude steered array  
[NASA-CASE-GSC-11446-1] c 33 N74-20860  
Stark-effect modulation of CO<sub>2</sub> laser with NH<sub>2</sub>D  
[NASA-CASE-NPO-11945-1] c 36 N76-18427  
Adaptive reference voltage generator for firing angle control of line-commutated inverters  
[NASA-CASE-MFS-25215-1] c 33 N83-31953

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Noise limiter Patent  
[NASA-CASE-NPO-10169] c 10 N71-24844  
Acoustic rotation control  
[NASA-CASE-NPO-15689-1] c 71 N84-23233  
High voltage power supply  
[NASA-CASE-GSC-12818-1] c 33 N85-29147

**AMPOULES**

Ampoule sealing apparatus and process — for housing a semiconductor growth charge under vacuum  
[NASA-CASE-LAR-12847-1] c 33 N83-16633  
Apparatus and method for heating a material in a transparent ampoule — crystal growth  
[NASA-CASE-MFS-25436-1] c 27 N83-36220  
Reusable thermal cycling clamp  
[NASA-CASE-LAR-12868-1] c 37 N85-21651  
Method of preparing radially homogeneous mercury cadmium telluride crystals  
[NASA-CASE-MFS-25786-2] c 76 N90-20896

**ANALGESIA**

Indomethacin-antihistamine combination for gastric ulceration control  
[NASA-CASE-ARC-11118-2] c 52 N81-14613  
Indomethacin-antihistamine combination for gastric ulceration control  
[NASA-CASE-ARC-11118-1] c 52 N81-29764

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[NASA-CASE-XMF-01097] c 10 N71-16058  
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[NASA-CASE-MFS-13046] c 07 N71-19433  
Electronic divider and multiplier using photocells Patent  
[NASA-CASE-XFR-05637] c 09 N71-19480  
Continuous Fourier transform method and apparatus — for the analysis of simultaneous analog signal components  
[NASA-CASE-ARC-10466-1] c 60 N75-13539  
Electronic analog divider  
[NASA-CASE-LEW-11881-1] c 33 N77-17354  
Tuned analog network  
[NASA-CASE-GSC-12650-1] c 33 N84-14421

**ANALOG COMPUTERS**

Analog spatial maneuver computer  
[NASA-CASE-GSC-10880-1] c 08 N72-11172

**ANALOG DATA**

Data compression processor Patent  
[NASA-CASE-NPO-10068] c 08 N71-19288  
Wide range data compression system Patent  
[NASA-CASE-GSC-02612] c 08 N71-19435  
Analog Signal to Discrete Time Interval Converter (ASDTIC)  
[NASA-CASE-ERC-10048] c 09 N72-25251  
Digital plus analog output encoder  
[NASA-CASE-GSC-12115-1] c 62 N76-31946  
Velocity measurement system  
[NASA-CASE-MFS-23363-1] c 35 N78-32396

**ANALOG SIMULATION**

Apparatus for simulating optical transmission links  
[NASA-CASE-GSC-11877-1] c 74 N76-18913

**ANALOG TO DIGITAL CONVERTERS**

Analog-to-digital conversion system Patent  
[NASA-CASE-XAC-00404] c 08 N70-40125  
Analog to digital converter Patent  
[NASA-CASE-XLA-00670] c 08 N71-12501  
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[NASA-CASE-XAC-04031] c 08 N71-18594  
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[NASA-CASE-XNP-04780] c 08 N71-19687  
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[NASA-CASE-LEW-10345-1] c 10 N71-25899  
Analog signal integration and reconstruction system Patent  
[NASA-CASE-NPO-10344] c 10 N71-26544  
Analog to digital converter tester Patent  
[NASA-CASE-XLA-06713] c 14 N71-28991  
Wide range analog-to-digital converter with a variable gain amplifier  
[NASA-CASE-NPO-11018] c 08 N72-21200  
Analog-to-digital converter  
[NASA-CASE-MS-13110-1] c 08 N72-22163  
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[NASA-CASE-NPO-10560] c 08 N72-22166  
Digital control and information system  
[NASA-CASE-NPO-11016] c 08 N72-31226  
Counting digital filters  
[NASA-CASE-NPO-11821-1] c 08 N73-26175  
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[NASA-CASE-XNP-00477] c 08 N73-28045  
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[NASA-CASE-NPO-13385-1] c 33 N76-18345  
Analog to digital converter for two-dimensional radiant energy array computers  
[NASA-CASE-GSC-11839-3] c 60 N77-32731  
Electrochemical detection device — for use in microbiology  
[NASA-CASE-LAR-11922-1] c 25 N79-24073  
Heads up display  
[NASA-CASE-LAR-12630-1] c 06 N84-27733  
Method of and apparatus for generating an interstitial point in a data stream having an even number of data points  
[NASA-CASE-MFS-25319-1] c 60 N85-33701  
Frequency domain laser velocimeter signal processor  
[NASA-CASE-LAR-13552-1-CU] c 33 N89-14385  
A digitally controlled system for effecting and presenting a selected electrical resistance  
[NASA-CASE-MFS-29149-1] c 33 N90-19492

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[NASA-CASE-NPO-10691] c 14 N71-26199  
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[NASA-CASE-XNP-09451] c 06 N71-26754  
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[NASA-CASE-ARC-10443-1] c 14 N73-20477  
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[NASA-CASE-ARC-10802-1] c 35 N75-30502  
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[NASA-CASE-MS-13802-2] c 35 N76-15431  
Optically selective, acoustically resonant gas detecting transducer  
[NASA-CASE-ARC-10639-1] c 35 N78-13400

**ANCHORS (FASTENERS)**

Daze fasteners  
[NASA-CASE-LAR-13009-2] c 37 N87-22976

**ANECHOIC CHAMBERS**

Almond test body — for microwave anechoic chambers  
[NASA-CASE-LAR-13747-1-CU] c 32 N89-28672

**ANEMOMETERS**

Anemometer with braking mechanism Patent  
[NASA-CASE-XMF-05224] c 14 N71-23726  
Maxometers (peak wind speed anemometers)  
[NASA-CASE-MFS-20916] c 14 N73-25460

- Radionuclide counting technique for measuring wind velocity and direction  
[NASA-CASE-LAR-12971-1] c 47 N84-28292
- Thermal remote anemometer system  
[NASA-CASE-LAR-13508-1] c 35 N88-23962
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[NASA-CASE-ARC-10985-1] c 52 N79-10724
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[NASA-CASE-ARC-11036-1] c 35 N78-32395  
Aerodynamic side-force alleviator means  
[NASA-CASE-LAR-12326-1] c 02 N81-14968
- ANGLES (GEOMETRY)**  
Internal flare angle gauge Patent  
[NASA-CASE-XMF-04415] c 14 N71-24693  
Method for generating ultra-precise angles Patent  
[NASA-CASE-XGS-04173] c 19 N71-26674  
Rotating raster generator  
[NASA-CASE-FRC-10071-1] c 32 N74-20813  
Angular measurement system  
[NASA-CASE-MFS-25825-1] c 31 N86-29055  
Universal precision sine bar attachment  
[NASA-CASE-MFS-28253-1] c 37 N89-28831
- ANGULAR ACCELERATION**  
Angular accelerometer Patent  
[NASA-CASE-XMS-05836] c 14 N70-41682
- ANGULAR CORRELATION**  
Device for determining relative angular position between a spacecraft and a radiation emitting celestial body  
[NASA-CASE-GSC-11444-1] c 14 N73-28490
- ANGULAR DISTRIBUTION**  
Noncontacting method for measuring angular deflection  
[NASA-CASE-LAR-12178-1] c 74 N80-21138
- ANGULAR MOMENTUM**  
Stretch de-spin mechanism Patent  
[NASA-CASE-XGS-00619] c 30 N70-40016  
Rim inertial measuring system  
[NASA-CASE-LAR-12052-1] c 18 N81-29152  
Fluidic momentum controller  
[NASA-CASE-MSC-20906-2] c 35 N89-15379
- ANGULAR RESOLUTION**  
Angular measurement system Patent  
[NASA-CASE-XMF-00447] c 14 N70-33179
- ANGULAR VELOCITY**  
Angular position and velocity sensing apparatus Patent  
[NASA-CASE-XGS-05680] c 14 N71-17585  
Speed control device for a heavy duty shaft — solar sails for spacecraft propulsion  
[NASA-CASE-NPO-14170-1] c 37 N81-15364  
Interferometric angle monitor  
[NASA-CASE-GSC-12614-1] c 74 N83-32577  
Fluidic angular velocity sensor  
[NASA-CASE-NPO-16479-1CU] c 35 N86-32695
- ANHYDRIDES**  
Perfluoro alkylene dioxy-bis-(4-phthalic anhydrides and oxy-bis-(perfluoroalkyleneoxyphthalic anhydrides)  
[NASA-CASE-MFS-22356-1] c 23 N75-30256  
Catalysts for polyimide foams from aromatic isocyanates and aromatic dianhydrides — flame retardant foams  
[NASA-CASE-ARC-11107-1] c 25 N80-16116  
Prepolymer dianhydrides  
[NASA-CASE-NPO-13899-1] c 27 N80-32515  
Maleimido substituted aromatic cyclotriphosphazenes  
[NASA-CASE-ARC-11428-1] c 23 N86-19376  
Novel polyimide compositions based on 4,4'-isophthaloyldiphthalic anhydride (IDPA)  
[NASA-CASE-LAR-14194-1] c 24 N90-15148  
Wet spinning of solid polyamic acid fibers  
[NASA-CASE-LAR-14162-1] c 27 N90-15259  
Copolyimide with a combination of flexibilizing groups  
[NASA-CASE-LAR-13821-1] c 27 N90-16950  
Substituted 1,1,1-triaryl-2,2,2-trifluoroethanes and processes for their synthesis  
[NASA-CASE-LEW-14345-2] c 25 N90-23497  
Aromatic polyimides containing a dimethylsilane-linked dianhydride  
[NASA-CASE-LAR-14198-1] c 27 N90-26956
- ANILINE**  
Process for preparation of dianilinosilanes Patent  
[NASA-CASE-XMF-06409] c 06 N71-23230
- ANIMALS**  
Automatic real-time pair-feeding system for animals  
[NASA-CASE-ARC-10302-1] c 51 N74-15778  
Tread drum for animals — having an electrical shock station  
[NASA-CASE-ARC-10917-1] c 51 N78-27733
- ANISOTROPIC MEDIA**  
Hybrid composite laminate structures  
[NASA-CASE-LEW-12118-1] c 24 N77-27188
- ANISOTROPY**  
High speed magneto-resistive random access memory  
[NASA-CASE-NPO-17954-1CU] c 60 N90-26519
- ANNEALING**  
Recovery of radiation damaged solar cells through thermal annealing  
[NASA-CASE-XGS-04047-2] c 03 N72-11062  
CDS solid state phase insensitive ultrasonic transducer — annealing cadmium sulfide crystals  
[NASA-CASE-LAR-12304-1] c 35 N80-20559
- ANNIHILATION REACTIONS**  
Slow positron beam generator for lifetime studies  
[NASA-CASE-LAR-14250-1-SB] c 72 N90-27472
- ANNULAR NOZZLES**  
Rocket thrust chamber Patent  
[NASA-CASE-XLE-00145] c 28 N70-36806  
Annular slit colloid thruster Patent  
[NASA-CASE-GSC-10709-1] c 28 N71-25213
- ANNULAR PLATES**  
Annular supersonic decelerator or drogue Patent  
[NASA-CASE-XLE-00222] c 02 N70-37939  
Multiple plate hydrostatic viscous damper  
[NASA-CASE-LEW-12445-1] c 37 N81-22360
- ANNULI**  
Shaft transducer having dc output proportional to angular velocity  
[NASA-CASE-NPO-15706-1] c 35 N84-28017
- ANODES**  
Heat activated cell with alkali anode and alkali salt electrolyte Patent  
[NASA-CASE-LEW-11358] c 03 N71-26084  
Storage battery comprising negative plates of a wedge shaped configuration — for preventing shape change induced malfunctions  
[NASA-CASE-NPO-11806-1] c 44 N74-19693  
Resistive anode image converter  
[NASA-CASE-HQN-10876-1] c 33 N76-27473  
Rechargeable battery which combats shape change of the zinc anode  
[NASA-CASE-HQN-10882-1] c 44 N76-29699  
Arc control in compact arc lamps  
[NASA-CASE-NPO-10870-1] c 33 N77-22386  
Multiple anode arc lamp system  
[NASA-CASE-NPO-10857-1] c 33 N80-14330  
Ion sputter textured graphite — anode collector plates in electron tube devices  
[NASA-CASE-LEW-12919-1] c 24 N83-10117  
Method and apparatus for rebalancing a REDOX flow cell system  
[NASA-CASE-LEW-14127-1] c 33 N86-20680
- ANODIC COATINGS**  
Temperature reducing coating for metals subject to flame exposure Patent  
[NASA-CASE-XLE-00035] c 33 N71-29151  
Anode for ion thruster  
[NASA-CASE-LEW-12048-1] c 20 N77-20162  
Variable anodic thermal control coating  
[NASA-CASE-LAR-12719-1] c 44 N83-34449
- ANOMALIES**  
Aircraft liftemeter  
[NASA-CASE-LAR-12518-1] c 06 N86-27280
- ANTENNA ARRAYS**  
Antenna system using parasitic elements and two driven elements at 90 deg angle fed 180 deg out of phase Patent  
[NASA-CASE-XLA-00414] c 07 N70-38200  
Multiple input radio receiver Patent  
[NASA-CASE-XLA-00901] c 07 N71-10775  
Horn feed having overlapping apertures Patent  
[NASA-CASE-GSC-10452] c 07 N71-12396  
Tracking antenna system Patent  
[NASA-CASE-GSC-10553-1] c 07 N71-19854  
Radar antenna system for acquisition and tracking Patent  
[NASA-CASE-XMS-09610] c 07 N71-24625  
Antenna array phase quadrature tracking system Patent  
[NASA-CASE-MSC-12205-1] c 07 N71-27056  
Antenna array at focal plane of reflector with coupling network for beam switching Patent  
[NASA-CASE-GSC-10220-1] c 07 N71-27233  
Triaxial antenna Patent  
[NASA-CASE-XGS-02290] c 07 N71-28809  
Virtual wall slot circularly polarized planar array antenna  
[NASA-CASE-NPO-10301] c 07 N72-11148  
Stacked array of omnidirectional antennas  
[NASA-CASE-LAR-10545-1] c 09 N72-21244  
Circularly polarized antenna  
[NASA-CASE-ERC-10214] c 09 N72-31235  
Phase control circuits using frequency multiplications for phased array antennas  
[NASA-CASE-ERC-10285] c 10 N73-16206  
Plural beam antenna  
[NASA-CASE-GSC-11013-1] c 09 N73-19234  
Amplitude steered array  
[NASA-CASE-GSC-11446-1] c 33 N74-20860
- Position determination systems — using orbital antenna scan of celestial bodies  
[NASA-CASE-MSC-12593-1] c 17 N76-21250  
Thin conformal antenna array for microwave power conversions  
[NASA-CASE-NPO-13886-1] c 32 N78-24391  
RF beam center location method and apparatus for power transmission system  
[NASA-CASE-NPO-13821-1] c 44 N78-28594  
Phased array antenna control  
[NASA-CASE-MSC-14939-1] c 32 N79-11264  
Phase conjugation method and apparatus for an active retrodirective antenna array  
[NASA-CASE-NPO-13641-1] c 32 N79-24210  
Scannable beam forming interferometer antenna array system  
[NASA-CASE-GSC-12365-1] c 32 N80-28578  
Frequency translating phase conjugation circuit for active retrodirective antenna array — microwave transmission  
[NASA-CASE-NPO-14536-1] c 32 N81-14185  
Coaxial phased array antenna  
[NASA-CASE-MSC-16800-1] c 32 N81-14187  
Baseband signal combiner for large aperture antenna array  
[NASA-CASE-NPO-14641-1] c 32 N81-29308  
Cavity-backed, micro-strip dipole antenna array  
[NASA-CASE-MSC-18606-1] c 32 N82-11336  
Spiral slotted phased antenna array  
[NASA-CASE-MSC-18532-1] c 32 N82-27558  
Method and apparatus for self-calibration and phasing of array antenna  
[NASA-CASE-NPO-15920-1] c 33 N85-21493  
Ground plane interference elimination by passive element  
[NASA-CASE-NPO-16632-1-CU] c 32 N87-15390  
Stripline feed for a microstrip array of patch elements with teardrop shaped probes  
[NASA-CASE-NPO-17548-1-CU] c 32 N90-16104  
Planar microstrip Yagi array antenna  
[NASA-CASE-NPO-17873-1-CU] c 32 N90-27015
- ANTENNA COMPONENTS**  
Digital servo controller — for rotating antenna shaft  
[NASA-CASE-KSC-10769-1] c 33 N74-29556  
Faraday rotation measurement method and apparatus  
[NASA-CASE-NPO-14839-1] c 35 N82-15381  
Ground plane interference elimination by passive element  
[NASA-CASE-NPO-16632-1-CU] c 32 N87-15390
- ANTENNA COUPLERS**  
Dual band combiner for horn antenna  
[NASA-CASE-NPO-14519-1] c 32 N80-23524
- ANTENNA DESIGN**  
Low noise single aperture multimode monopulse antenna feed system Patent  
[NASA-CASE-XNP-01735] c 07 N71-22750  
Nose cone mounted heat resistant antenna Patent  
[NASA-CASE-XMS-04312] c 07 N71-22984  
Antenna array phase quadrature tracking system Patent  
[NASA-CASE-MSC-12205-1] c 07 N71-27056  
Unfurlable structure including coiled strips thrust launched upon tension release Patent  
[NASA-CASE-HQN-00937] c 07 N71-28979  
Antenna design for surface wave suppression Patent  
[NASA-CASE-XLA-10772] c 07 N71-28980  
Target acquisition antenna  
[NASA-CASE-GSC-10064-1] c 10 N72-22235  
Collapsible high gain antenna  
[NASA-CASE-KSC-10392] c 07 N73-26117  
Dish antenna having switchable beamwidth — with truncated concave ellipsoid subreflector  
[NASA-CASE-GSC-11760-1] c 33 N75-19516  
Horn antenna having V-shaped corrugated slots  
[NASA-CASE-LAR-11112-1] c 32 N76-15330  
Highly efficient antenna system using a corrugated horn and scanning hyperbolic reflector  
[NASA-CASE-NPO-13568-1] c 32 N76-21365  
Furlable antenna — antenna design  
[NASA-CASE-NPO-13553-1] c 33 N76-32457  
Collapsible corrugated horn antenna  
[NASA-CASE-LAR-11745-1] c 32 N80-29539  
Multiple band circularly polarized microstrip antenna  
[NASA-CASE-MSC-18334-1] c 32 N80-32604  
Spiral slotted phased antenna array  
[NASA-CASE-MSC-18532-1] c 32 N82-27558  
Ground plane interference elimination by passive element  
[NASA-CASE-NPO-16632-1-CU] c 32 N87-15390  
Switched steerable multiple beam antenna system  
[NASA-CASE-MSC-20873-1-SB] c 32 N89-11961  
Planar microstrip Yagi array antenna  
[NASA-CASE-NPO-17873-1-CU] c 32 N90-27015
- ANTENNA FEEDS**  
Multi-feed cone Cassegrain antenna Patent  
[NASA-CASE-NPO-10539] c 07 N71-11285

Horn feed having overlapping apertures Patent  
[NASA-CASE-GSC-10452] c 07 N71-12396

Target acquisition antenna  
[NASA-CASE-GSC-10064-1] c 10 N72-22235

Composite antenna feed  
[NASA-CASE-GSC-11046-1] c 07 N73-28013

Low loss dichroic plate  
[NASA-CASE-NPO-13171-1] c 32 N74-11000

High efficiency multifrequency feed  
[NASA-CASE-GSC-11909] c 32 N74-20863

Single frequency, two feed dish antenna having switchable beamwidth  
[NASA-CASE-GSC-11968-1] c 32 N76-15329

Reflex feed system for dual frequency antenna with frequency cutoff means  
[NASA-CASE-NPO-14022-1] c 32 N78-31321

Antenna feed system for receiving circular polarization and transmitting linear polarization  
[NASA-CASE-NPO-14362-1] c 32 N80-16261

Multifrequency broadband polarized horn antenna  
[NASA-CASE-NPO-14588-1] c 32 N81-25278

Microwave switching power divider — antenna feeds  
[NASA-CASE-GSC-12420-1] c 33 N82-16340

Focal axis resolver for offset reflector antennas  
[NASA-CASE-GSC-12630-1] c 33 N83-36355

Beam forming network  
[NASA-CASE-NPO-15743-1] c 32 N85-29118

Stripline feed for a microstrip array of patch elements with teardrop shaped probes  
[NASA-CASE-NPO-17548-1-CU] c 32 N90-16104

# ANTENNA RADIATION PATTERNS

Broadband choke for antenna structure  
[NASA-CASE-XMS-05303] c 07 N69-27462

Dual mode horn antenna Patent  
[NASA-CASE-XNP-01057] c 07 N71-15907

Electronic scanning of 2-channel monopulse patterns Patent  
[NASA-CASE-GSC-10299-1] c 09 N71-24804

High impact antenna Patent  
[NASA-CASE-NPO-10231] c 07 N71-26101

Triaxial antenna Patent  
[NASA-CASE-XGS-02290] c 07 N71-28809

Lightning tracking system  
[NASA-CASE-KSC-10729-1] c 09 N73-32110

Highly efficient antenna system using a corrugated horn and scanning hyperbolic reflector  
[NASA-CASE-NPO-13568-1] c 32 N76-21365

Coaxial phased array antenna  
[NASA-CASE-MSC-16800-1] c 32 N81-14187

Ground plane interference elimination by passive element  
[NASA-CASE-NPO-16632-1-CU] c 32 N87-15390

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Self-erecting reflector Patent  
[NASA-CASE-XGS-09190] c 31 N71-16102

High impact antenna Patent  
[NASA-CASE-NPO-10231] c 07 N71-26101

Collapsible antenna boom and transmission line Patent  
[NASA-CASE-MFS-20068] c 07 N71-27191

Conical reflector antenna  
[NASA-CASE-NPO-10303] c 07 N72-22127

Coupled cavity traveling wave tube with velocity tapering  
[NASA-CASE-LEW-12296-1] c 33 N82-26568

Antenna grout replacement system  
[NASA-CASE-NPO-15202-1] c 27 N83-34043

Measurement apparatus and procedure for the determination of surface emissivities  
[NASA-CASE-LAR-13455-1] c 32 N87-21206

# ANTIBIOTICS

Determination of antimicrobial susceptibilities on infected urines without isolation  
[NASA-CASE-GSC-12046-1] c 52 N79-14750

# ANTIBODIES

Pseudomonas diagnostic assay  
[NASA-CASE-NPO-17653-1-CU] c 51 N90-27239

# ANTIFRICTION BEARINGS

Hybrid lubrication system and bearing Patent  
[NASA-CASE-XNP-01641] c 15 N71-22997

Rolling element bearings Patent  
[NASA-CASE-XLE-09527-2] c 15 N71-26189

High speed hybrid bearing comprising a fluid bearing and a rolling bearing connected in series  
[NASA-CASE-LEW-11152-1] c 15 N73-32359

Production of hollow components for rolling element bearings by diffusion welding  
[NASA-CASE-LEW-11026-1] c 15 N73-33383

Method of making bearing materials — self-lubricating, oxidation resistant composites for high temperature applications  
[NASA-CASE-LEW-11930-4] c 24 N79-17916

Method of making bearing material  
[NASA-CASE-LEW-11930-3] c 24 N80-33482

Cryogenic anti-friction bearing with inner race  
[NASA-CASE-MFS-28384-1] c 37 N90-27112

# ANTIGRAVITY

Anti-gravity device  
[NASA-CASE-MFS-22758-1] c 70 N75-26789

# ANTIHISTAMINICS

Indomethacin-antihistamine combination for gastric ulceration control  
[NASA-CASE-ARC-11118-2] c 52 N81-14613

Indomethacin-antihistamine combination for gastric ulceration control  
[NASA-CASE-ARC-11118-1] c 52 N81-29764

# ANTIREFLECTION COATINGS

Silicon nitride coated, plastic covered solar cell  
[NASA-CASE-LEW-11496-1] c 44 N77-14580

Broadband optical radiation detector  
[US-PATENT-4,262,198] c 74 N83-19597

# ANVILS

Apparatus for making diamonds  
[NASA-CASE-MFS-20698] c 15 N72-20446

# APERTURES

Focusing system for an ion source having apertured electrodes Patent  
[NASA-CASE-XNP-03332] c 09 N71-10618

Threadless fastener apparatus Patent  
[NASA-CASE-XFR-05302] c 15 N71-23254

On-film optical recording of camera lens settings  
[NASA-CASE-MSC-12363-1] c 14 N73-26431

Method of forming aperture plate for electron microscope  
[NASA-CASE-ARC-10448-2] c 74 N75-12732

Method of making an apertured casting — using duplicate mold  
[NASA-CASE-LEW-11169-1] c 37 N76-23570

Electron microscope aperture system  
[NASA-CASE-ARC-10448-3] c 35 N77-14408

A compact fast wide angle broad band spectrometer optical system  
[NASA-CASE-NPO-17562-1-CU] c 74 N89-24153

# APOLLO PROJECT

Space suit  
[NASA-CASE-MSC-12609-1] c 05 N73-32012

# APOLLO SPACECRAFT

Energy absorbing structure Patent Application  
[NASA-CASE-MSC-12279-1] c 15 N70-35679

Low onset rate energy absorber  
[NASA-CASE-MSC-12279] c 15 N72-17450

# APPLICATIONS OF MATHEMATICS

Apparatus for computing square roots Patent  
[NASA-CASE-XGS-04768] c 08 N71-19437

# APPROACH

Spectrally balanced chromatic landing approach lighting system  
[NASA-CASE-ARC-10990-1] c 04 N82-16059

# AQUATIC PLANTS

Method for treating wastewater using microorganisms and vascular aquatic plants  
[NASA-CASE-NSTL-10] c 45 N84-12654

# AQUEOUS SOLUTIONS

Anti-fog composition — for prevention of fogging on surfaces such as space helmet visors and windshields  
[NASA-CASE-MSC-13530-2] c 23 N75-14834

Automated system for identifying traces of organic chemical compounds in aqueous solutions  
[NASA-CASE-NPO-13063-1] c 25 N76-18245

Method for separating biological cells — suspended in aqueous polymer systems  
[NASA-CASE-MFS-23883-1] c 51 N80-16715

Method of cross-linking polyvinyl alcohol and other water soluble resins  
[NASA-CASE-LEW-13103-1] c 27 N80-32516

Electrophoresis oxidation system for measurement of organic concentration in water  
[NASA-CASE-MSC-16497-1] c 25 N82-12166

Liquid immersion apparatus for minute articles  
[NASA-CASE-MFS-25363-1] c 37 N82-12441

Coal desulfurization by aqueous chlorination  
[NASA-CASE-NPO-14902-1] c 25 N82-29371

Hydrodesulfurization of chlorinated coal  
[NASA-CASE-NPO-15304-1] c 25 N83-31743

Passivation of high temperature superconductors  
[NASA-CASE-NPO-17949-1-CU] c 76 N90-26684

# ARC DISCHARGES

Device for preventing high voltage arcing in electron beam welding Patent  
[NASA-CASE-XMF-08522] c 15 N71-19486

Self-repeating plasma generator having communicating annular and linear arc discharge passages Patent  
[NASA-CASE-XLA-03103] c 25 N71-21693

Method and apparatus for nondestructive testing — using high frequency arc discharges  
[NASA-CASE-MFS-21233-1] c 38 N74-15395

Sustained arc ignition system  
[NASA-CASE-LEW-12444-1] c 33 N77-28385

# ARC HEATING

Electric-arc heater Patent  
[NASA-CASE-XLA-00330] c 33 N70-34540

Electric arc device for heating gases Patent  
[NASA-CASE-XAC-00319] c 25 N70-41628

Annular arc accelerator shock tube  
[NASA-CASE-NPO-13528-1] c 09 N77-10071

# ARC JET ENGINES

Magneto-plasma-dynamic arc thruster  
[NASA-CASE-LEW-11180-1] c 25 N73-25760

Arcjet power supply and start circuit  
[NASA-CASE-LEW-14374-1] c 09 N88-28939

# ARC LAMPS

Starting circuit for vapor lamps and the like Patent  
[NASA-CASE-XNP-01058] c 09 N71-12540

Compact, high intensity arc lamp with internal magnetic field producing means  
[NASA-CASE-NPO-11510-1] c 33 N77-21315

Depressurization of arc lamps  
[NASA-CASE-NPO-10790-1] c 33 N77-21316

Arc control in compact arc lamps  
[NASA-CASE-NPO-10870-1] c 33 N77-22386

Purging means and method for Xenon arc lamps  
[NASA-CASE-NPO-11978] c 31 N78-17238

Multiple anode arc lamp system  
[NASA-CASE-NPO-10857-1] c 33 N80-14330

Self-clamping arc light reflector for welding torch  
[NASA-CASE-MFS-29207-1] c 74 N87-25843

Arc lamp power supply using a voltage multiplier  
[NASA-CASE-LAR-13202-1] c 33 N88-23942

# ARC SPRAYING

Arc spray fabrication of metal matrix composite monolayer  
[NASA-CASE-LEW-13828-1] c 24 N85-30027

Improved process for HIP canning of composites  
[NASA-CASE-LEW-14990-1-CU] c 24 N90-15147

# ARC WELDING

Spectral method for monitoring atmospheric contamination of inert-gas welding shields Patent  
[NASA-CASE-XMF-02039] c 15 N71-15871

Automatic closed circuit television arc guidance control Patent  
[NASA-CASE-MFS-13046] c 07 N71-19433

Device for preventing high voltage arcing in electron beam welding Patent  
[NASA-CASE-XMF-08522] c 15 N71-19486

Welding skate with computerized control Patent  
[NASA-CASE-XMF-07069] c 15 N71-23815

Grain refinement control in TIG arc welding  
[NASA-CASE-MSC-19095-1] c 37 N75-19683

Self-clamping arc light reflector for welding torch  
[NASA-CASE-MFS-29207-1] c 74 N87-25843

Welding torch gas cup extension  
[NASA-CASE-MFS-29252-1] c 37 N88-23980

ARC length control for plasma welding  
[NASA-CASE-MSC-20900-1] c 37 N88-30131

Trailer shield assembly for a welding torch  
[NASA-CASE-MFS-29260-1] c 37 N90-19602

# ARCHITECTURE

Foldable construction block  
[NASA-CASE-MSC-12233-2] c 32 N73-13921

Space station architecture, module, berthing hub, shell assembly, berthing mechanism and utility connection channel  
[NASA-CASE-ARC-11505-2] c 18 N89-25266

# ARCHITECTURE (COMPUTERS)

Massively parallel processor computer  
[NASA-CASE-GSC-12223-1] c 60 N83-25378

Distributed multipoint memory architecture  
[NASA-CASE-NPO-15342-1] c 60 N83-32342

High dynamic global positioning system receiver  
[NASA-CASE-NPO-16171-1-CU] c 04 N86-27270

Method for Viterbi decoding of large constraint length convolutional codes  
[NASA-CASE-NPO-17310-1-CU] c 17 N88-28946

Nanosequence digital logic controller  
[NASA-CASE-NPO-16116-2] c 60 N88-29310

Fault tolerant hypercube computer system architecture  
[NASA-CASE-NPO-16859-1-CU] c 60 N90-21527

Special purpose parallel computer architecture for real-time control and simulation in robotic applications  
[NASA-CASE-NPO-17629-1-CU] c 60 N90-27268

Analog hardware for learning neural networks  
[NASA-CASE-NPO-17664-1-CU] c 62 N90-27384

# ARGON

Liquid crystal light valve structures  
[NASA-CASE-MSC-20036-1] c 76 N85-33826

# ARITHMETIC

VLSI binary updown counter  
[NASA-CASE-NPO-17205-1-CU] c 60 N90-21525

# ARM (ANATOMY)

Apparatus for applying simulator g-forces to an arm of an aircraft simulator pilot  
[NASA-CASE-LAR-10550-1] c 09 N74-30597

Orthotic arm joint — for use in mechanical arms  
[NASA-CASE-MFS-21611-1] c 54 N75-12616

Controller arm for a remotely related slave arm  
[NASA-CASE-ARC-11052-1] c 37 N79-28551

## ARMATURES

- Direct current motor with stationary armature and field Patent  
[NASA-CASE-XGS-05290] c 09 N71-25999
- Solenoid valve including guide for armature and valve member  
[NASA-CASE-GSC-10607-1] c 15 N72-20442
- Electric motive machine including magnetic bearing  
[NASA-CASE-XGS-07805] c 15 N72-33476
- Natural turbulence electrical power generator — using wave action or random motion  
[NASA-CASE-LAR-11551-1] c 44 N80-29834

## AROMATIC COMPOUNDS

- Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-1] c 27 N74-21156
- Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-2] c 27 N76-32315
- Polymeric foams from cross-linkable poly-n-arylenebenzimidazoles  
[NASA-CASE-ARC-11008-1] c 27 N78-31232
- Process for preparing thermoplastic aromatic polyimides  
[NASA-CASE-LAR-11828-1] c 27 N78-32261
- Curing agent for polyepoxides and epoxy resins and composites cured therewith — preventing carbon fiber release  
[NASA-CASE-LEW-13226-1] c 27 N81-17260
- The 1,1,1-triaryl-2,2,2-trifluoroethanes and process for their synthesis  
[NASA-CASE-ARC-11097-1] c 25 N82-24312

## ARRAYS

- Radio frequency arraying method for receivers  
[NASA-CASE-NPO-14328-1] c 32 N80-18253
- Pyroelectric detector arrays  
[NASA-CASE-LAR-12363-1] c 35 N82-31659
- Pyroelectric detector arrays  
[NASA-CASE-LAR-12363-2] c 33 N83-24763
- Tm,Ho:YLF laser end-pumped by a semiconductor diode laser array  
[NASA-CASE-NPO-17282-1-CU] c 36 N89-12856

## ARTERIES

- Arterial pulse wave pressure transducer  
[NASA-CASE-GSC-11531-1] c 52 N74-27566
- Apparatus for imaging deep arterial and coronary lesions  
[NASA-CASE-NPO-17439-1-CU] c 52 N90-16391

## ARTIFICIAL CLOUDS

- Barium release system  
[NASA-CASE-LAR-10670-1] c 06 N73-30097

## ARTIFICIAL GRAVITY

- Rotating space station simulator Patent  
[NASA-CASE-XLA-03127] c 11 N71-10776
- Artificial gravity spin deployment system Patent  
[NASA-CASE-XNP-02595] c 31 N71-21881
- Space vehicle with artificial gravity and earth-like environment  
[NASA-CASE-LEW-11101-1] c 31 N73-32750

## ARTIFICIAL SATELLITES

- Satellite communication system and method Patent  
[NASA-CASE-GSC-10118-1] c 07 N71-24621
- Gravity gradient attitude control system Patent  
[NASA-CASE-GSC-10555-1] c 21 N71-27324

## ASBESTOS

- Reconstituted asbestos matrix — for use in fuel or electrolysis cells  
[NASA-CASE-MSC-12568-1] c 24 N76-14204

## ASHES

- Energy efficient continuous flow ash lockhopper  
[NASA-CASE-NPO-16985-1-CU] c 31 N88-24814

## ASPECT RATIO

- Variable sweep wing aircraft Patent  
[NASA-CASE-XLA-00221] c 02 N70-33266
- Variable-span aircraft Patent  
[NASA-CASE-XLA-00166] c 02 N70-34178
- Variable sweep aircraft wing Patent  
[NASA-CASE-XLA-00350] c 02 N70-38011

## ASPHALT

- Thermoplastic rubber comprising ethylene-vinyl acetate copolymer, asphalt and fluiding oil  
[NASA-CASE-NPO-08835-1] c 27 N78-33228

## ASSAYING

- Rapid, quantitative determination of bacteria in water — adenosine triphosphate  
[NASA-CASE-GSC-12158-1] c 51 N83-27569
- Pseudomonas diagnostic assay  
[NASA-CASE-NPO-17653-1-CU] c 51 N90-27239

## ASSEMBLIES

- Multiple Belleville spring assembly Patent  
[NASA-CASE-XNP-00840] c 15 N70-38225
- Bearing seat usable in a gas turbine engine  
[NASA-CASE-LEW-12477-1] c 37 N77-32501
- Foldable beam  
[NASA-CASE-LAR-12077-1] c 31 N81-25259
- Resilient seal ring assembly with spring means applying force to wedge member — cryogenic applications  
[NASA-CASE-MFS-25678-1] c 37 N84-11497

- Self-locking mechanical center joint  
[NASA-CASE-LAR-12864-1] c 37 N85-30336
- X-ray determination of parts alignment  
[NASA-CASE-MSC-20418-1] c 74 N86-20126
- Emitted vibration measurement device and method  
[NASA-CASE-MFS-25981-1] c 35 N87-14670
- Fully redundant mechanical release actuator  
[NASA-CASE-LAR-13198-1] c 37 N87-23983

## ASSEMBLING

- Magnetic attachment mechanism  
[NASA-CASE-MSC-21095-1] c 37 N89-12866

## ASSEMBLY

- Alignment and assembly tool for very large diameter cylinders  
[NASA-CASE-MFS-28001-2] c 37 N88-14360

## ASSOCIATIVE PROCESSING (COMPUTERS)

- Hybrid analog-digital associative neural network  
[NASA-CASE-NPO-17058-1-CU] c 62 N87-25803

## ASTRONAUT LOCOMOTION

- Rotating space station simulator Patent  
[NASA-CASE-XLA-03127] c 11 N71-10776
- Space suit pressure stabilizer Patent  
[NASA-CASE-XLA-05332] c 05 N71-11194
- Equipotential space suit Patent  
[NASA-CASE-LAR-10007-1] c 05 N71-11195
- Hard space suit Patent  
[NASA-CASE-XAC-07043] c 05 N71-23161
- Foreshortened convolute section for a pressurized suit Patent  
[NASA-CASE-XMS-09637-1] c 05 N71-24730
- Locomotion and restraint aid Patent  
[NASA-CASE-ARC-10153] c 05 N71-28619
- Walking boot assembly  
[NASA-CASE-ARC-11101-1] c 54 N78-17675
- Spacesuit mobility knee joints  
[NASA-CASE-ARC-11058-2] c 54 N79-24651

## ASTRONAUT MANEUVERING EQUIPMENT

- Hand-held self-manuevering unit Patent  
[NASA-CASE-XMS-05304] c 05 N71-12336
- Space environmental work simulator Patent  
[NASA-CASE-XMF-07488] c 11 N71-18773
- Personal propulsion unit Patent  
[NASA-CASE-MFS-20130] c 28 N71-27585

## ASTRONAUT PERFORMANCE

- Locomotion and restraint aid Patent  
[NASA-CASE-ARC-10153] c 05 N71-28619
- Spacesuit mobility joints  
[NASA-CASE-ARC-11058-1] c 54 N78-31735

## ASTRONAUT TRAINING

- Training vehicle for controlling attitude Patent  
[NASA-CASE-XMS-02977] c 11 N71-10746
- Mechanical simulator of low gravity conditions Patent  
[NASA-CASE-MFS-10555] c 11 N71-19494
- Subgravity simulator Patent  
[NASA-CASE-XMS-04798] c 11 N71-21474

## ASTRONAUTS

- Emergency lunar communications system  
[NASA-CASE-MFS-21042] c 07 N72-25171
- Manual actuator — for spacecraft exercising machines  
[NASA-CASE-MFS-21481-1] c 37 N74-18127
- Bi-stem gripping apparatus  
[NASA-CASE-MFS-28185-1] c 37 N88-23979

## ASTRONAVIGATION

- Guidance and maneuver analyzer Patent  
[NASA-CASE-XNP-09572] c 14 N71-15621

## ASTRONOMICAL PHOTOGRAPHY

- Apparatus for photographing meteors  
[NASA-CASE-LAR-10226-1] c 14 N73-19419

## ASYMMETRY

- Method for the preparation of thin-skinned asymmetric reverse osmosis membranes and products thereof  
[NASA-CASE-ARC-11358-1] c 51 N84-28361

## ATMOSPHERIC CHEMISTRY

- All-optical photochemical spatial light modulators based on photoinduced electron transfer in rigid matrices  
[NASA-CASE-NPO-17612-1-CU] c 74 N90-27487

## ATMOSPHERIC COMPOSITION

- Atmospheric sampling devices  
[NASA-CASE-NPO-11373] c 13 N72-25323
- Apparatus for sampling particulates in gases  
[NASA-CASE-HQN-10037-1] c 14 N73-27376
- Monitoring atmospheric pollutants with a heterodyne radiometer transmitter-receiver  
[NASA-CASE-NPO-11919-1] c 35 N74-11284
- Chelate-modified polymers for atmospheric gas chromatography  
[NASA-CASE-ARC-11154-1] c 25 N80-23383
- Mobile sampler for use in acquiring samples of terrestrial atmospheric gases  
[NASA-CASE-NPO-15220-1] c 45 N83-25217

## ATMOSPHERIC DENSITY

- System for indicating fuel-efficient aircraft altitude  
[NASA-CASE-NPO-15351-2] c 06 N84-34443

## ATMOSPHERIC ENTRY

- Flight craft Patent  
[NASA-CASE-XAC-02058] c 02 N71-16087

- Means for measuring the electron density gradients of the plasma sheath formed around a space vehicle Patent  
[NASA-CASE-XLA-06232] c 25 N71-20563

- Orbital and entry tracking accessory for globes — to provide range requirements for reentry vehicles to any landing site  
[NASA-CASE-LAR-10626-1] c 19 N74-21015

## ATMOSPHERIC ENTRY SIMULATION

- Plasma accelerator Patent  
[NASA-CASE-XLA-00675] c 25 N70-33267
- Flow field simulation Patent  
[NASA-CASE-LAR-11138] c 12 N71-20436

## ATMOSPHERIC MOISTURE

- Geodetic distance measuring apparatus  
[NASA-CASE-GSC-12609-2] c 36 N83-29681

## ATMOSPHERIC PHYSICS

- Rocket borne instrument to measure electric fields inside electrified clouds  
[NASA-CASE-KSC-10730-1] c 14 N73-32318

## ATMOSPHERIC PRESSURE

- Method of purifying metallurgical grade silicon employing reduced pressure atmospheric control  
[NASA-CASE-NPO-14474-1] c 26 N80-14229
- Method of and apparatus for measuring temperature and pressure — atmospheric sounding  
[NASA-CASE-GSC-12558-1] c 36 N85-21639

## ATMOSPHERIC RADIATION

- Method and apparatus for measuring solar activity and atmospheric radiation effects  
[NASA-CASE-ERC-10278] c 14 N73-26432

## ATMOSPHERIC REFRACTION

- Geodetic distance measuring apparatus  
[NASA-CASE-GSC-12609-1] c 36 N81-22344

## ATMOSPHERIC SCATTERING

- Clear air turbulence detector  
[NASA-CASE-MFS-21244-1] c 36 N75-15028

## ATMOSPHERIC SOUNDING

- Microwave limb sounder — measuring trace gases in the upper atmosphere  
[NASA-CASE-NPO-14544-1] c 46 N82-12685

## ATMOSPHERIC TEMPERATURE

- System for indicating fuel-efficient aircraft altitude  
[NASA-CASE-NPO-15351-2] c 06 N84-34443
- Method of and apparatus for measuring temperature and pressure — atmospheric sounding  
[NASA-CASE-GSC-12558-1] c 36 N85-21639

## ATMOSPHERIC TURBULENCE

- Passive optical wind and turbulence detection system Patent  
[NASA-CASE-XMF-14032] c 20 N71-16340
- Focused laser Doppler velocimeter  
[NASA-CASE-MFS-23178-1] c 35 N77-10493

## ATOMIC BEAMS

- Variable energy, high flux, ground-state atomic oxygen source  
[NASA-CASE-NPO-16640-1-CU] c 72 N87-21661

## ATOMIC EXCITATIONS

- Double photon excitation of high-Rydberg atoms as a long-lived submillimeter detector  
[NASA-CASE-NPO-16372-1] c 72 N88-33127

## ATOMIC STRUCTURE

- Tailorable infrared sensing device with strain layer superlattice structure  
[NASA-CASE-NPO-16617-2-CU] c 35 N90-17118

## ATOMIZERS

- Cryogenic cooling system Patent  
[NASA-CASE-NPO-10467] c 23 N71-26654
- Constant-output atomizer — Inhalation therapy and aerosol research  
[NASA-CASE-MFS-25631-1] c 34 N84-12406
- Liquid seeding atomizer  
[NASA-CASE-ARC-11631-1] c 34 N87-21255

## ATS

- Doppler frequency spread correction device for multiplex transmissions  
[NASA-CASE-XGS-02749] c 07 N69-39978

## ATTACHMENT

- Wide temperature range electronic device with lead attachment  
[NASA-CASE-ERC-10224-2] c 09 N73-27150

## ATTENUATORS

- Rotary vane attenuator wherein rotor has orthogonally disposed resistive and dielectric cards  
[NASA-CASE-NPO-11418-1] c 14 N73-13420
- Pulse transducer with artifact signal attenuator — heart rate sensors  
[NASA-CASE-FRC-11012-1] c 52 N80-23969

## ATTITUDE (INCLINATION)

- Analog spatial maneuver computer  
[NASA-CASE-GSC-10880-1] c 08 N72-11172
- Spacecraft attitude sensor  
[NASA-CASE-GSC-10890-1] c 21 N73-30640
- Interferometer mirror tilt correcting system  
[NASA-CASE-NPO-13687-1] c 35 N78-18391



## ATTITUDE CONTROL

Visual target for retrofire attitude control  
[NASA-CASE-XMS-12158-1] c 31 N69-27499

Three axis controller Patent  
[NASA-CASE-XFR-00181] c 21 N70-33279

Method and apparatus for determining satellite orientation utilizing spatial energy sources Patent  
[NASA-CASE-XGS-00466] c 21 N70-34297

Attitude and propellant flow control system and method Patent  
[NASA-CASE-XMF-00185] c 21 N70-34539

Space vehicle attitude control Patent  
[NASA-CASE-XNP-00465] c 21 N70-35395

Attitude control for spacecraft Patent  
[NASA-CASE-XNP-00294] c 21 N70-36938

Attitude orientation of spin-stabilized space vehicles Patent  
[NASA-CASE-XLA-00281] c 21 N70-36943

Ejection unit Patent  
[NASA-CASE-XNP-00676] c 15 N70-38996

Three-axis controller Patent  
[NASA-CASE-XAC-01404] c 05 N70-41581

Training vehicle for controlling attitude Patent  
[NASA-CASE-XMS-02977] c 11 N71-10746

Canopus detector including automotive gain control of photomultiplier tube Patent  
[NASA-CASE-XNP-03914] c 21 N71-10771

Automatic balancing device Patent  
[NASA-CASE-LAR-10774] c 10 N71-13545

Spacecraft experiment pointing and attitude control system Patent  
[NASA-CASE-XLA-05464] c 21 N71-14132

Attitude control system Patent  
[NASA-CASE-XGS-04393] c 21 N71-14159

Control system for rocket vehicles Patent  
[NASA-CASE-XLA-01163] c 21 N71-15582

Reactance control system Patent  
[NASA-CASE-XMF-01598] c 21 N71-15583

Spacecraft attitude detection system by stellar reference Patent  
[NASA-CASE-XGS-03431] c 21 N71-15642

Three-axis finger tip controller for switches Patent  
[NASA-CASE-XAC-02405] c 09 N71-16089

Thrust and direction control apparatus Patent  
[NASA-CASE-XLE-03583] c 31 N71-17629

Attitude sensor for space vehicles Patent  
[NASA-CASE-XLA-00793] c 21 N71-22880

Attitude control system for sounding rockets Patent  
[NASA-CASE-XGS-01654] c 31 N71-24750

Voice operated controller Patent  
[NASA-CASE-XLA-04063] c 31 N71-33160

Attitude sensor  
[NASA-CASE-LAR-10586-1] c 19 N74-15089

Temperature compensated digital inertial sensor — circuit for maintaining inertial element of gyroscope or accelerometer at constant position  
[NASA-CASE-NPO-13044-1] c 35 N74-15094

Sun direction detection system  
[NASA-CASE-NPO-13722-1] c 74 N77-22951

Thrust augmented spin recovery device  
[NASA-CASE-LAR-11970-2] c 08 N81-19130

Programmable scan/read circuitry for charge coupled device imaging detectors — spacecraft attitude control and star trackers  
[NASA-CASE-NPO-15345-1] c 74 N84-23247

Propulsion apparatus and method using boil-off gas from a cryogenic liquid  
[NASA-CASE-MFS-25946-1] c 20 N86-26368

Emitted vibration measurement device and method  
[NASA-CASE-MFS-25981-1] c 35 N87-14670

Aircraft control position indicator  
[NASA-CASE-LAR-12984-1] c 06 N87-22678

Three axis attitude control system  
[NASA-CASE-GSC-12970-1] c 08 N88-23808

Fluid-loop reaction system  
[NASA-CASE-NPO-17204-1-CU] c 34 N90-26292

**ATTITUDE GYROS**

Space vehicle attitude control Patent  
[NASA-CASE-XNP-00465] c 21 N70-35395

Attitude control system  
[NASA-CASE-MFS-22787-1] c 15 N77-10113

**ATTITUDE INDICATORS**

Photosensitive device to detect bearing deviation Patent  
[NASA-CASE-XNP-00438] c 21 N70-35089

Controllers Patent  
[NASA-CASE-XMS-07487] c 15 N71-23255

Combined optical attitude and altitude indicating instrument Patent  
[NASA-CASE-XLA-01907] c 14 N71-23268

Head-up attitude display  
[NASA-CASE-ERC-10392] c 21 N73-14692

Attitude sensor  
[NASA-CASE-LAR-10586-1] c 19 N74-15089

Translatory shock absorber for attitude sensors  
[NASA-CASE-MFS-22905-1] c 19 N76-22284

Air speed and attitude probe  
[NASA-CASE-FRC-11009-1] c 06 N80-18036

Aircraft body-axis rotation measurement system  
[NASA-CASE-FRC-11043-1] c 06 N83-33882

**ATTITUDE STABILITY**

Dynamic precession damper for spin stabilized vehicles Patent  
[NASA-CASE-XLA-01989] c 21 N70-34295

Apparatus for automatically stabilizing the attitude of a nonguided vehicle  
[NASA-CASE-ARC-10134] c 30 N72-17673

Method of damping nutation motion with minimum spin axis attitude disturbance  
[NASA-CASE-GSC-12551-1] c 18 N83-28064

**AUDIO EQUIPMENT**

Audio system with means for reducing noise effects  
[NASA-CASE-NPO-11631] c 10 N73-12244

**AUDIO FREQUENCIES**

Signal path series step biased multidevice high efficiency amplifier Patent  
[NASA-CASE-GSC-10668-1] c 07 N71-28430

Audio frequency marker system  
[NASA-CASE-NPO-11147] c 14 N72-27408

**AUDIO SIGNALS**

Method and apparatus for operating on companded PCM voice data  
[NASA-CASE-KSC-11285-1] c 32 N86-27513

**AUDITORY DEFECTS**

Hearing aid malfunction detection system  
[NASA-CASE-MS-14916-1] c 33 N78-10375

**AUDITORY PERCEPTION**

Auditory display for the blind  
[NASA-CASE-HQN-10832-1] c 71 N74-21014

**AUDITORY SIGNALS**

Audio signal processor Patent  
[NASA-CASE-MS-12223-1] c 07 N71-26181

Audio system with means for reducing noise effects  
[NASA-CASE-NPO-11631] c 10 N73-12244

**AUDITORY STIMULI**

Auditory display for the blind  
[NASA-CASE-HQN-10832-1] c 71 N74-21014

**AUGER EFFECT**

Apparatus for accurately preloading auger attachment means for frangible protective material  
[NASA-CASE-MS-18791-1] c 37 N83-36482

**AUSTENITIC STAINLESS STEELS**

Nickel aluminum coated low alloy stainless steel  
[NASA-CASE-LEW-11267-1] c 17 N73-32414

Device for measuring the ferrite content in an austenitic stainless-steel weld  
[NASA-CASE-MFS-22907-1] c 26 N76-18257

**AUTOCALVES**

System for sterilizing objects — cleaning space vehicle systems  
[NASA-CASE-KSC-11085-1] c 54 N81-24724

**AUTOCORRELATION**

Linear three-tap feedback shift register Patent  
[NASA-CASE-NPO-10351] c 08 N71-12503

Correlation function apparatus Patent  
[NASA-CASE-XNP-00746] c 07 N71-21476

**AUTOMATIC CONTROL**

Bus voltage compensation circuit for controlling direct current motor  
[NASA-CASE-XMS-04215-1] c 09 N69-39987

Optical alignment system Patent  
[NASA-CASE-XNP-02029] c 14 N70-41955

Pulsed energy power system Patent  
[NASA-CASE-MS-13112] c 03 N71-11057

Automatic balancing device Patent  
[NASA-CASE-LAR-10774] c 10 N71-13545

Apparatus for welding torch angle and seam tracking control Patent  
[NASA-CASE-XMF-03287] c 15 N71-15607

Leak detector Patent  
[NASA-CASE-LAR-10323-1] c 12 N71-17573

Solar optical telescope dome control system Patent  
[NASA-CASE-MS-10966] c 14 N71-19568

Automatic welding speed controller Patent  
[NASA-CASE-XMF-01730] c 15 N71-23050

Indexing microwave switch Patent  
[NASA-CASE-XNP-06507] c 09 N71-23548

Automatic pump Patent  
[NASA-CASE-XNP-04731] c 15 N71-24042

Automatic fatigue test temperature programmer Patent  
[NASA-CASE-XLA-02059] c 33 N71-24276

Automatic battery charger Patent  
[NASA-CASE-XNP-04758] c 03 N71-24605

Transistor servo system including a unique differential amplifier circuit Patent  
[NASA-CASE-XMF-05195] c 10 N71-24881

Electron beam tube containing a multiple cathode array employing indexing means for cathode substitution Patent  
[NASA-CASE-NPO-10625] c 09 N71-26182

Automatic signal range selector for metering devices Patent  
[NASA-CASE-XMS-06487] c 14 N71-26244

Automated fluid chemical analyzer Patent  
[NASA-CASE-XNP-09451] c 06 N71-26754

Automatic control of liquid cooling garment by cutaneous and external auditory meatus temperatures  
[NASA-CASE-MS-13917-1] c 05 N72-15098

Optimal control system for an electric motor driven vehicle  
[NASA-CASE-NPO-11210] c 11 N72-20244

Automated equipotential plotter  
[NASA-CASE-NPO-11134] c 09 N72-21246

Ion thruster magnetic field control  
[NASA-CASE-LEW-10835-1] c 28 N72-22771

Temperature controller for a fluid cooled garment  
[NASA-CASE-ARC-10599-1] c 05 N73-26071

Redundant speed control for brushless Hall effect motor  
[NASA-CASE-MFS-20207-1] c 09 N73-32107

Programmable physiological infusion  
[NASA-CASE-ARC-10447-1] c 52 N74-22771

Automatically operable self-leveling load table  
[NASA-CASE-MFS-22039-1] c 09 N75-12968

Automatic focus control for facsimile cameras  
[NASA-CASE-LAR-11213-1] c 35 N75-15014

Traffic survey system — using optical scanners  
[NASA-CASE-MFS-22631-1] c 66 N76-19888

Automatic visual inspection system for microelectronics  
[NASA-CASE-NPO-13282] c 38 N78-17396

Automatic fluid dispenser  
[NASA-CASE-ARC-10820-1] c 35 N78-19466

Method for producing solar energy panels by automation  
[NASA-CASE-LEW-12541-1] c 44 N78-25529

Circuit for automatic load sharing in parallel converter modules  
[NASA-CASE-NPO-14056-1] c 33 N79-24257

Method for forming a solar array strip  
[NASA-CASE-NPO-13652-3] c 44 N80-14474

Method of growing a ribbon crystal particularly suited for facilitating automated control of ribbon width  
[NASA-CASE-NPO-14295-1] c 76 N80-32245

Integrated control system for a gas turbine engine  
[NASA-CASE-LEW-12594-2] c 07 N81-19116

Solar energy control system — temperature measurement  
[NASA-CASE-MFS-25287-1] c 44 N82-18686

Hydraulic actuator mechanism to control aircraft spoiler movements through dual input commands  
[NASA-CASE-LAR-12412-1] c 08 N82-24205

Automatic weld torch guidance control system  
[NASA-CASE-MFS-25807] c 37 N83-20154

Automatic thermal switch — spacecraft applications  
[NASA-CASE-GSC-12553-1] c 34 N83-28356

Linear magnetic bearings  
[NASA-CASE-GSC-12582-2] c 37 N85-20337

Jet pump-drive system for heat removal  
[NASA-CASE-NPO-16494-1-CU] c 34 N85-29182

Automatic oscillator frequency control system  
[NASA-CASE-GSC-12804-1] c 33 N86-20668

Automated weld torch guidance control system  
[NASA-CASE-MFS-25807-2] c 37 N86-21850

Airplane automatic control force trimming device for asymmetric engine failures  
[NASA-CASE-LAR-13280-1] c 08 N87-20999

Self indexing latch system  
[NASA-CASE-MFS-25956-1] c 37 N87-21333

**AUTOMATIC CONTROL VALVES**

Check valve assembly for a probe Patent  
[NASA-CASE-XLA-00128] c 15 N70-37925

Metal valve pintle with encapsulated elastomeric body Patent  
[NASA-CASE-MS-12116-1] c 15 N71-17648

Semitoroidal diaphragm cavitating valve Patent  
[NASA-CASE-XNP-09704] c 12 N71-18615

Valving device for automatic refilling in cryogenic liquid systems  
[NASA-CASE-NPO-11177] c 15 N72-17453

Combined pressure regulator and shutoff valve  
[NASA-CASE-NPO-13201-1] c 37 N75-15050

Iodine generator for reclaimed water purification  
[NASA-CASE-MS-14632-1] c 54 N78-14784

Automatic compression adjusting mechanism for internal combustion engines  
[NASA-CASE-MS-18807-1] c 37 N83-36483

**AUTOMATIC FREQUENCY CONTROL**

Automatic acquisition system for phase-lock loop  
[NASA-CASE-XGS-04994] c 09 N69-21543

Audio signal processor Patent  
[NASA-CASE-MS-12223-1] c 07 N71-26181

Automatic frequency control loop including synchronous switching circuits  
[NASA-CASE-KSC-10393] c 09 N72-21247

- Self-tuning bandpass filter  
[NASA-CASE-ARC-10264-1] c 09 N73-20231
- Programmable electronic synthesized capacitance  
[NASA-CASE-GSC-12961-1] c 33 N87-22895
- Frequency domain laser velocimeter signal processor  
[NASA-CASE-LAR-13552-1-CU] c 33 N89-14385
- AUTOMATIC GAIN CONTROL**
- Automatic gain control system  
[NASA-CASE-XMS-05307] c 09 N69-24330
- Amplifier drift tester  
[NASA-CASE-XMS-05562-1] c 09 N69-39986
- Self-tuning bandpass filter  
[NASA-CASE-ARC-10264-1] c 09 N73-20231
- Digital automatic gain amplifier  
[NASA-CASE-KSC-11008-1] c 33 N79-22373
- Automatic level control circuit  
[NASA-CASE-KSC-11170-1] c 33 N83-36356
- Frequency domain laser velocimeter signal processor  
[NASA-CASE-LAR-13552-1-CU] c 33 N89-14385
- AUTOMATIC TEST EQUIPMENT**
- Visual examination apparatus  
[NASA-CASE-ARC-10329-1] c 05 N73-26072
- Automatic microbial transfer device  
[NASA-CASE-LAR-11354-1] c 35 N75-27330
- Visual examination apparatus  
[US-PATENT-RE-28,921] c 52 N76-30783
- Automated clinical system for chromosome analysis  
[NASA-CASE-NPO-13913-1] c 52 N79-12694
- Automatic flowmeter calibration system  
[NASA-CASE-KSC-11076-1] c 34 N81-26402
- Pressure suit joint analyzer  
[NASA-CASE-ARC-11314-1] c 54 N82-26987
- AUTOMATION**
- Automated multi-level vehicle parking system  
[NASA-CASE-NPO-13058-1] c 37 N77-22480
- AUTOMOBILE ENGINES**
- Automotive gas turbine fuel control  
[NASA-CASE-LEW-12785-1] c 37 N78-24545
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[NASA-CASE-XNP-01855] c 15 N71-28937
- Internally supported flexible duct joint — device for conducting fluids in high pressure systems  
[NASA-CASE-MFS-19193-1] c 37 N75-19886
- Protective telescoping shield for solar concentrator  
[NASA-CASE-NPO-16236-1] c 44 N86-27706
- Pressurized bellows flat contact heat exchanger interface  
[NASA-CASE-MSC-21271-1] c 34 N90-21999
- BELTS**
- Apparatus for forming drive belts  
[NASA-CASE-NPO-13205-1] c 31 N74-32917
- BENDING**
- Radio frequency shielded enclosure Patent  
[NASA-CASE-XMF-09422] c 07 N71-19436
- Means for suppressing or attenuating bending motion of elastic bodies Patent  
[NASA-CASE-XAC-05632] c 32 N71-23971
- Technique of elbow bending small jacketed transfer lines Patent  
[NASA-CASE-XNP-10475] c 15 N71-24679
- Forming tool for ribbon or wire  
[NASA-CASE-XLA-05966] c 15 N72-12408
- BENDING DIAGRAMS**
- Electrostatic charged particle analyzer having deflection members shaped according to the periodic voltage applied thereto Patent  
[NASA-CASE-XAC-05506-1] c 24 N71-16095
- BENDING FATIGUE**
- Apparatus for positioning and loading a test specimen Patent  
[NASA-CASE-XLE-01300] c 15 N70-41993
- Low temperature flexure fatigue cryostat Patent  
[NASA-CASE-XMF-02964] c 14 N71-17659
- BENDING MOMENTS**
- Missile launch release system Patent  
[NASA-CASE-XMF-03198] c 30 N70-40353
- Compliant hydrodynamic fluid journal bearing  
[NASA-CASE-LEW-13670-1] c 37 N86-19606
- BENDING VIBRATION**
- Viscous pendulum damper Patent  
[NASA-CASE-LAR-10274-1] c 14 N71-17626
- BENZENE**
- Intumescent composition, foamed product prepared therewith, and process for making same  
[NASA-CASE-ARC-10304-1] c 18 N73-26572
- Polymer of phosphonylmethyl-2,4- and -2,6-diamino benzene and polyfunctional monomer  
[NASA-CASE-ARC-11506-2] c 23 N86-32525
- Fire and heat resistant laminating resins based on maleimide and citraconimide substituted 1-(diorgano oxyphosphonyl) methyl-2,4- and -2,6-diaminobenzenes  
[NASA-CASE-ARC-11533-3] c 27 N87-24564
- The 1-(diorganooxyphosphonyl)-methyl-2,4- and -2,6-diamido benzenes  
[NASA-CASE-ARC-11425-4] c 23 N90-20133
- Some 1-(diorganooxyphosphonyl)methyl-2,4- and -2,6-dinitro-benzenes  
[NASA-CASE-ARC-11425-3] c 23 N90-23475
- BERYLLIUM ALLOYS**
- Corrosion resistant beryllium Patent  
[NASA-CASE-LEW-10327] c 17 N71-33408
- Thin film strain transducer  
[NASA-CASE-WLP-10055-1] c 35 N84-28015
- BERYLLIUM HYDRIDES**
- Inhibited solid propellant composition containing beryllium hydride  
[NASA-CASE-NPO-10866-1] c 28 N79-14228
- BERYLLIUM OXIDES**
- High temperature beryllium oxide capacitor  
[NASA-CASE-LEW-11938-1] c 33 N76-15373
- High modulus invert analog glass compositions containing beryllia  
[NASA-CASE-HQN-10931-2] c 27 N82-29452
- High modulus rare earth and beryllium containing silicate glass compositions — for glass reinforcing fibers  
[NASA-CASE-HQN-10595-1] c 27 N82-29455
- BIDIRECTIONAL REFLECTANCE**
- A reference standard for bidirectional reflection distribution function and bidirectional transmission distribution function measurement  
[NASA-CASE-MFS-28183-1] c 74 N89-13253
- BIMETALS**
- Nonmagnetic thermal motor for a magnetometer  
[NASA-CASE-XAR-03786] c 09 N69-21313
- Thermostatic actuator  
[NASA-CASE-NPO-10637] c 15 N72-12409
- Thermal motor  
[NASA-CASE-NPO-11283] c 09 N72-25260
- Thermal compensating structural member  
[NASA-CASE-MFS-20433] c 15 N72-28496
- Bimetallic fluid displacement apparatus — for stirring and heating stored gases and liquids  
[NASA-CASE-ARC-10441-1] c 35 N74-15126
- Thermocouples of tantalum and rhenium alloys for more stable vacuum-high temperature performance  
[NASA-CASE-LEW-12050-1] c 35 N77-32454
- BINARY CODES**
- Time division radio relay synchronizing system using different sync code words for in sync and out of sync conditions Patent  
[NASA-CASE-GSC-10373-1] c 07 N71-19773
- Parallel generation of the check bits of a PN sequence Patent  
[NASA-CASE-XNP-04623] c 10 N71-26103
- Encoder/decoder system for a rapidly synchronizable binary code Patent  
[NASA-CASE-NPO-10342] c 10 N71-33407
- Binary coded sequential acquisition ranging system  
[NASA-CASE-NPO-11194] c 08 N72-25209
- Binary concatenated coding system  
[NASA-CASE-MSC-14082-1] c 60 N76-23850
- Multiple rate digital command detection system with range clean-up capability  
[NASA-CASE-NPO-13753-1] c 32 N77-20289
- Pseudo noise code and data transmission method and apparatus  
[NASA-CASE-GSC-12017-1] c 32 N77-30308
- Binary to binary coded decimal converter  
[NASA-CASE-GSC-12044-1] c 60 N78-17691
- Apparatus and method for stabilized phase detection for binary signal tracking loops  
[NASA-CASE-MSC-16461-1] c 33 N79-11313
- BINARY DATA**
- Binary magnetic memory device Patent  
[NASA-CASE-XGS-00174] c 08 N70-34743
- Ripple add and ripple subtract binary counters Patent  
[NASA-CASE-XGS-04766] c 08 N71-18602
- Computing apparatus Patent  
[NASA-CASE-XGS-04765] c 08 N71-18693
- Digital synchronizer Patent  
[NASA-CASE-NPO-10851] c 07 N71-24613
- Differential phase shift keyed communication system  
[NASA-CASE-MSC-14065-1] c 32 N74-26654
- Modulator for tone and binary signals — phase of modulation of tone and binary signals on carrier waves in communication systems  
[NASA-CASE-GSC-11743-1] c 32 N75-24981
- Binary to binary coded decimal converter  
[NASA-CASE-GSC-12044-1] c 60 N78-17691
- VLSI binary updown counter  
[NASA-CASE-NPO-17205-1-CU] c 60 N90-21525
- BINARY DIGITS**
- Logarithmic converter Patent  
[NASA-CASE-XLA-00471] c 08 N70-34778
- Full binary adder Patent  
[NASA-CASE-XGS-00689] c 08 N70-34787
- Binary number sorter Patent  
[NASA-CASE-NPO-10112] c 08 N71-12502
- Binary sequence detector Patent  
[NASA-CASE-XNP-05415] c 08 N71-12505
- Display for binary characters Patent  
[NASA-CASE-XGS-04887] c 08 N71-20571
- Comparator for the comparison of two binary numbers Patent  
[NASA-CASE-XNP-04819] c 08 N71-23295
- High speed direct binary to binary coded decimal converter and scaler  
[NASA-CASE-KSC-10595] c 08 N73-12176
- A m-ary linear feedback shift register with binary logic  
[NASA-CASE-NPO-11868] c 10 N73-20254
- Binary concatenated coding system  
[NASA-CASE-MSC-14082-1] c 60 N76-23850
- Long period pseudo random number sequence generator  
[NASA-CASE-NPO-17241-1-CU] c 33 N90-23636
- BINARY FLUIDS**
- Flow measuring apparatus  
[NASA-CASE-LEW-12078-1] c 35 N75-30503
- BINARY TO DECIMAL CONVERTERS**
- Binary to binary-coded-decimal converter Patent  
[NASA-CASE-XNP-00432] c 08 N70-35423
- High speed binary to decimal conversion system Patent  
[NASA-CASE-XGS-01230] c 08 N71-19544
- BCD to decimal decoder Patent  
[NASA-CASE-XKS-06167] c 08 N71-24890
- High speed direct binary-to-binary coded decimal converter  
[NASA-CASE-KSC-10326] c 08 N72-21197
- Binary to binary coded decimal converter  
[NASA-CASE-GSC-12044-1] c 60 N78-17691
- BINDERS (MATERIALS)**
- Bonded solid lubricant coating Patent  
[NASA-CASE-XMS-00259] c 18 N70-36400
- Brazing alloy binder  
[NASA-CASE-XMF-05868] c 26 N75-27125
- Alkali-metal silicate binders and methods of manufacture  
[NASA-CASE-GSC-12303-1] c 24 N79-31347
- BINOCLULARS**
- Binocular device for displaying numerical information in field of view  
[NASA-CASE-LAR-11782-1] c 74 N77-20882
- BIOASSAY**
- Apparatus for producing three-dimensional recordings of fluorescence spectra Patent  
[NASA-CASE-XGS-01231] c 14 N70-41676
- Flavin coenzyme assay  
[NASA-CASE-GSC-10565-1] c 06 N72-25149
- Method of detecting and counting bacteria in body fluids  
[NASA-CASE-GSC-11092-2] c 04 N73-27052
- Amino acid analysis  
[NASA-CASE-NPO-12130-1] c 25 N75-14844
- Servo-controlled intravital microscope system  
[NASA-CASE-NPO-13214-1] c 35 N75-25123
- Method of detecting and counting bacteria  
[NASA-CASE-GSC-11917-2] c 51 N76-29891
- Automated clinical system for chromosome analysis  
[NASA-CASE-NPO-13913-1] c 52 N79-12694
- Determination of antimicrobial susceptibilities on infected urines without isolation  
[NASA-CASE-GSC-12046-1] c 52 N79-14750
- Method and apparatus for eliminating luminol interference material  
[NASA-CASE-MSC-16260-1] c 51 N80-16714
- BIODEGRADATION**
- Method for treating wastewater using microorganisms and vascular aquatic plants  
[NASA-CASE-NSTL-10] c 45 N84-12654
- BIODYNAMICS**
- Prosthesis coupling  
[NASA-CASE-KSC-11069-1] c 52 N79-26772
- Kinesimetric method and apparatus  
[NASA-CASE-GSC-18929-1] c 39 N83-20280
- BIOELECTRIC POTENTIAL**
- Electrode for biological recording  
[NASA-CASE-XMS-02872] c 05 N69-21925
- Method of making a perspiration resistant biopotential electrode  
[NASA-CASE-MSC-90153-2] c 05 N72-25120
- Process for control of cell division  
[NASA-CASE-LAR-10773-3] c 51 N77-25769
- BIOELECTRICITY**
- Plated electrodes Patent  
[NASA-CASE-XMS-04213-1] c 09 N71-26002
- Indirect microbial detection  
[NASA-CASE-LAR-12520-1] c 51 N81-28698

## BIOENGINEERING

- Bio-isolated dc operational amplifier — for bioelectric measurements  
[NASA-CASE-ARC-10596-1] c 33 N74-21851
- Actuator device for artificial leg  
[NASA-CASE-MFS-23225-1] c 52 N77-14735
- Percutaneous connector device  
[NASA-CASE-KSC-10849-1] c 52 N77-14738
- Prosthesis coupling  
[NASA-CASE-KSC-11069-1] c 52 N79-26772
- Subcutaneous electrode structure  
[NASA-CASE-ARC-11117-1] c 52 N81-14612
- Urine collection device  
[NASA-CASE-MSC-16433-1] c 52 N81-24711
- Bio-medical flow sensor — intravenous procedures  
[NASA-CASE-MSC-18761-1] c 52 N83-27577
- Prosthetic occlusive device for an internal passageway  
[NASA-CASE-MFS-25740-1] c 52 N84-11744
- Medical clip  
[NASA-CASE-LAR-12650-1] c 52 N84-28388

## BIOINSTRUMENTATION

- Temperature compensated solid state differential amplifier Patent  
[NASA-CASE-XAC-00435] c 09 N70-35440
- Electrode construction Patent  
[NASA-CASE-ARC-10043-1] c 05 N71-11193
- Pressed disc type sensing electrodes with ion-screening means Patent  
[NASA-CASE-XMS-04212-1] c 05 N71-12346
- EEG sleep analyzer and method of operation Patent  
[NASA-CASE-MSC-13282-1] c 05 N71-24729
- Plated electrodes Patent  
[NASA-CASE-XMS-04213-1] c 09 N71-26002
- Ultrasonic biomedical measuring and recording apparatus — for recording motion of internal organs such as heart valves  
[NASA-CASE-ARC-10597-1] c 52 N74-20726
- Subminiature insertable force transducer — including a strain gage to measure forces in muscles  
[NASA-CASE-NPO-13423-1] c 33 N75-31329
- Catheter tip force transducer for cardiovascular research  
[NASA-CASE-NPO-13643-1] c 52 N76-29896
- Biomedical ultrasonoscope  
[NASA-CASE-ARC-10994-1] c 52 N76-33835
- Thermistor holder for skin temperature measurements  
[NASA-CASE-ARC-10855-1] c 52 N77-10780
- Magnetic electrical connectors for biomedical percutaneous implants  
[NASA-CASE-KSC-11030-1] c 52 N77-25772
- Corneal seal device  
[NASA-CASE-LEW-12258-1] c 52 N77-28716
- Snap-in compressible biomedical electrode  
[NASA-CASE-MSC-14623-1] c 52 N77-28717
- Miniature implantable ultrasonic echosonometer  
[NASA-CASE-ARC-11035-1] c 52 N79-18580
- Induction powered biological radiosonde  
[NASA-CASE-ARC-11120-1] c 52 N80-18691
- Pulse transducer with artifact signal attenuator — heart rate sensors  
[NASA-CASE-FRC-11012-1] c 52 N80-23969
- Method and automated apparatus for detecting coliform organisms  
[NASA-CASE-MSC-16777-1] c 51 N80-27067
- Simultaneous muscle force and displacement transducer  
[NASA-CASE-NPO-14212-1] c 52 N80-27072
- Logic-controlled occlusive cuff system  
[NASA-CASE-MSC-14836-1] c 52 N82-11770
- Implantable electrical device  
[NASA-CASE-GSC-12560-1] c 52 N82-29863

## BIOLOGICAL EFFECTS

- Bio-reactor cell culture process  
[NASA-CASE-MSC-21293-1] c 51 N89-14666

## BIOLUMINESCENCE

- Light detection instrument Patent  
[NASA-CASE-XGS-05534] c 23 N71-16355
- Lyophilized reaction mixtures Patent  
[NASA-CASE-XGS-05532] c 06 N71-17705
- Application of luciferase assay for ATP to antimicrobial drug susceptibility  
[NASA-CASE-GSC-12039-1] c 51 N77-22794
- Rapid, quantitative determination of bacteria in water — adenosine triphosphate  
[NASA-CASE-GSC-12158-1] c 51 N83-27569

## BIOMEDICAL DATA

- Biomedical radiation detecting probe Patent  
[NASA-CASE-XMS-01177] c 05 N71-19440
- Biomedical ultrasonoscope  
[NASA-CASE-ARC-10994-2] c 52 N79-26771

## BIOMETRICS

- Pressed disc type sensing electrodes with ion-screening means Patent  
[NASA-CASE-XMS-04212-1] c 05 N71-12346

- Compressible biomedical electrode  
[NASA-CASE-MSC-13648] c 05 N72-27103
- Ultrasonic biomedical measuring and recording apparatus — for recording motion of internal organs such as heart valves  
[NASA-CASE-ARC-10597-1] c 52 N74-20726
- Arterial pulse wave pressure transducer  
[NASA-CASE-GSC-11531-1] c 52 N74-27566
- Biomedical ultrasonoscope  
[NASA-CASE-ARC-10994-1] c 52 N76-33835
- Miniature implantable ultrasonic echosonometer  
[NASA-CASE-ARC-11035-1] c 52 N79-18580
- Biomedical ultrasonoscope  
[NASA-CASE-ARC-10994-2] c 52 N79-26771
- Simultaneous muscle force and displacement transducer  
[NASA-CASE-NPO-14212-1] c 52 N80-27072
- Multifunctional transducer  
[NASA-CASE-NPO-14329-1] c 52 N81-20703
- Sweat collection capsule  
[NASA-CASE-ARC-11031-1] c 52 N81-29763
- Rapid quantification of an internal property — ultrasonic determination of bladder urine quantity  
[NASA-CASE-LAR-13689-1-NP] c 35 N87-23941
- BIOPROCESSING**  
Spiral vane bioreactor  
[NASA-CASE-MSC-21361-1] c 51 N89-25557
- BIOEFFECTORS**  
Horizontally rotated cell culture system  
[NASA-CASE-MSC-21294-1] c 51 N89-13131
- Spiral vane bioreactor  
[NASA-CASE-MSC-21361-1] c 51 N89-25557
- Bio-reactor chamber  
[NASA-CASE-MSC-20929-1] c 51 N90-17252
- Three-dimensional coculture process  
[NASA-CASE-MSC-21560-1] c 51 N90-18852
- BIOTECHNOLOGY**  
Bio-reactor cell culture process  
[NASA-CASE-MSC-21293-1] c 51 N89-14666
- Bio-reactor chamber  
[NASA-CASE-MSC-20929-1] c 51 N90-17252
- BIOTELEMETRY**  
Telemetry adaptable for implanting in an animal Patent  
[NASA-CASE-XAC-05706] c 05 N71-12342
- Miniature multichannel biotelemetry system  
[NASA-CASE-NPO-13065-1] c 52 N74-26625
- Medical subject monitoring systems — multichannel monitoring systems  
[NASA-CASE-MSC-14180-1] c 52 N76-14757
- Accelerometer telemetry system  
[NASA-CASE-ARC-10849-1] c 17 N76-29347
- Miniature ingestible telemetry devices to measure deep-body temperature  
[NASA-CASE-ARC-10583-1] c 52 N76-29894
- BIPOLAR TRANSISTORS**  
Voltage regulator for battery power source — using a bipolar transistor  
[NASA-CASE-FRC-10116-1] c 33 N79-23345
- Power converter  
[NASA-CASE-FRC-11014-1] c 33 N82-18494
- BIREFRINGENCE**  
Polarimeter for transient measurement Patent  
[NASA-CASE-XNP-08883] c 23 N71-16101
- BISMALEIMIDE**  
Amine terminated bisaspartimide polymer  
[NASA-CASE-ARC-11421-2] c 27 N86-31726
- Process for curing bismaleimide resins  
[NASA-CASE-ARC-11429-4CU] c 27 N87-15304
- Vinyl stilbazoles  
[NASA-CASE-ARC-11429-3CU] c 27 N87-16908
- BISMUTH**  
Manganese bismuth films with narrow transfer characteristics for Curie-point switching  
[NASA-CASE-NPO-11336-1] c 76 N79-16678
- BISMUTH COMPOUNDS**  
Hall effect magnetometer  
[NASA-CASE-LEW-11632-2] c 35 N75-13213
- BISTABLE CIRCUITS**  
AC logic flip-flop circuits Patent  
[NASA-CASE-XGS-00823] c 10 N71-15910
- BIT SYNCHRONIZATION**  
Telemetry word forming unit  
[NASA-CASE-XNP-09225] c 09 N69-24333
- Transition tracking bit synchronization system  
[NASA-CASE-NPO-10844] c 07 N72-20140
- Apparatus for deriving synchronizing pulses from pulses in a single channel PCM communications system  
[NASA-CASE-NPO-11302-1] c 07 N73-13149
- Method and apparatus for a single channel digital communications system — synchronization of received PCM signal by digital correlation with reference signal  
[NASA-CASE-NPO-11302-2] c 32 N74-10132
- BITERNARY CODE**  
Minimal logic block encoder Patent  
[NASA-CASE-NPO-10595] c 10 N71-25917

## BITS

- Parallel generation of the check bits of a PN sequence Patent  
[NASA-CASE-XNP-04623] c 10 N71-26103
- MOD 2 sequential function generator for multibit binary sequence  
[NASA-CASE-NPO-10636] c 08 N72-25210
- Bit error rate measurement above and below bit rate tracking threshold  
[NASA-CASE-MSC-12743-1] c 32 N79-10263
- BITUMENS**  
Oil shale extraction using super-critical extraction  
[NASA-CASE-NPO-15656-1] c 43 N84-23012
- BLACK BODY RADIATION**  
Black-body furnace Patent  
[NASA-CASE-XLE-01399] c 33 N71-15625
- Cavity radiometer Patent  
[NASA-CASE-XNP-08961] c 14 N71-24809
- Conically shaped cavity radiometer with a dual purpose cone winding Patent  
[NASA-CASE-XNP-09701] c 14 N71-26475
- Black body cavity radiometer Patent  
[NASA-CASE-NPO-10810] c 14 N71-27323
- Stable density stratification solar pond  
[NASA-CASE-NPO-15419-2] c 44 N85-30474
- BLADDER**  
Prosthetic urinary sphincter  
[NASA-CASE-MFS-23717-1] c 52 N81-25660
- Rapid quantification of an internal property — ultrasonic determination of bladder urine quantity  
[NASA-CASE-LAR-13689-1-NP] c 35 N87-23941
- Rapidly quantifying the relative distention of a human bladder  
[NASA-CASE-LAR-13901-1-NP] c 52 N90-21519
- BLADE TIPS**  
Modification and improvements to cooled blades Patent  
[NASA-CASE-XLE-00092] c 15 N70-33264
- Tip cap for a rotor blade  
[NASA-CASE-LEW-13654-1] c 07 N84-22560
- BLADES**  
Impact absorbing blade mounts for variable pitch blades  
[NASA-CASE-LEW-12313-1] c 37 N78-10468
- BLADES (CUTTERS)**  
Line cutter Patent  
[NASA-CASE-XMS-04072] c 15 N70-42017
- Tissue macerating instrument  
[NASA-CASE-LEW-12668-1] c 52 N78-14773
- Crystal cleaving machine  
[NASA-CASE-GSC-12584-1] c 37 N82-32730
- BLAST LOADS**  
Linear explosive comparison  
[NASA-CASE-LAR-10800-1] c 33 N72-27959
- BLOCK COPOLYMERS**  
Imide/arylene ether copolymers  
[NASA-CASE-LAR-14159-1-CU] c 27 N90-26953
- BLOOD**  
Reduction of blood serum cholesterol  
[NASA-CASE-NPO-12119-1] c 52 N75-15270
- Gas diffusion liquid storage bag and method of use for storing blood  
[NASA-CASE-NPO-13930-1] c 52 N79-14749
- Dialysis system — using ion exchange resin membranes permeable to urea molecules  
[NASA-CASE-NPO-14101-1] c 52 N80-14687
- BLOOD FLOW**  
Logic-controlled occlusive cuff system  
[NASA-CASE-MSC-14836-1] c 52 N82-11770
- BLOOD PRESSURE**  
Blood pressure measuring system for separating and separately recording dc signal and an ac signal Patent  
[NASA-CASE-XMS-06061] c 05 N71-23317
- Apparatus and method for processing Korotkov sounds — for blood pressure measurement  
[NASA-CASE-MSC-13999-1] c 52 N74-26626
- Arterial pulse wave pressure transducer  
[NASA-CASE-GSC-11531-1] c 52 N74-27566
- Circuit for detecting initial systole and diastolic notch — for monitoring arterial pressure  
[NASA-CASE-LEW-11581-1] c 54 N75-13531
- BLOOD VESSELS**  
Non-invasive method and apparatus for measuring pressure within a pliable vessel  
[NASA-CASE-ARC-11264-2] c 52 N83-29991
- BLUFF BODIES**  
Annular supersonic decelerator or drogue Patent  
[NASA-CASE-XLE-00222] c 02 N70-37939
- BLUNT BODIES**  
Flow field simulation Patent  
[NASA-CASE-LAR-11138] c 12 N71-20436
- BODIES OF REVOLUTION**  
Conforming polisher for aspheric surface of revolution Patent  
[NASA-CASE-XGS-02884] c 15 N71-22705

- Moment of inertia test fixture Patent  
[NASA-CASE-XGS-01023] c 14 N71-22992
- BODY FLUIDS**  
Programmable physiological infusion  
[NASA-CASE-ARC-10447-1] c 52 N74-22771  
Method of detecting and counting bacteria  
[NASA-CASE-GSC-11917-2] c 51 N76-29891  
Micro-fluid exchange coupling apparatus  
[NASA-CASE-ARC-11114-1] c 51 N81-14605
- BODY KINEMATICS**  
Space suit having improved waist and torso movement  
[NASA-CASE-ARC-10275-1] c 05 N72-22092  
Controller arm for a remotely related slave arm  
[NASA-CASE-ARC-11052-1] c 37 N79-28551  
Kinesimetric method and apparatus  
[NASA-CASE-MSC-18929-1] c 39 N83-20280
- BODY MEASUREMENT (BIOLOGY)**  
Biomedical ultrasonoscope  
[NASA-CASE-ARC-10994-1] c 52 N76-33835  
Miniature implantable ultrasonic echosonometer  
[NASA-CASE-ARC-11035-1] c 52 N79-18580  
Kinesimetric method and apparatus  
[NASA-CASE-MSC-18929-1] c 39 N83-20280  
Apparatus for determining changes in limb volume  
[NASA-CASE-MSC-18759-1] c 52 N83-27578
- BODY TEMPERATURE**  
Garments for controlling the temperature of the body  
Patent  
[NASA-CASE-XMS-10269] c 05 N71-24147  
Miniature ingestible telemeter devices to measure deep-body temperature  
[NASA-CASE-ARC-10583-1] c 52 N76-29894  
Method for thermal monitoring subcutaneous tissue  
[NASA-CASE-LAR-13028-1] c 52 N85-30618
- BODY VOLUME (BIOLOGY)**  
Whole body measurement systems — for weightlessness simulation  
[NASA-CASE-MSC-13972-1] c 52 N74-10975  
Apparatus for determining changes in limb volume  
[NASA-CASE-MSC-18759-1] c 52 N83-27578
- BODY-WING CONFIGURATIONS**  
Free wing assembly for an aircraft  
[NASA-CASE-FRC-10092-1] c 05 N79-12061  
Means for controlling aerodynamically induced twist  
[NASA-CASE-LAR-12175-1] c 05 N82-28279
- BOILERS**  
Boiler for generating high quality vapor Patent  
[NASA-CASE-XLE-00785] c 33 N71-16104  
Shell side liquid metal boiler  
[NASA-CASE-NPO-10831] c 33 N72-20915  
Carbon granule probe microphone for leak detection — recovery boilers  
[NASA-CASE-NPO-16027-1] c 35 N85-21597
- BOILING**  
Process for making a noble metal on tin oxide catalyst  
[NASA-CASE-LAR-13741-1-SB] c 25 N90-20180  
Boron-containing organosilane polymers and ceramic materials thereof  
[NASA-CASE-ARC-11649-2-SB] c 27 N90-21177
- BOLOMETERS**  
Insertion loss measuring apparatus having transformer means connected across a pair of bolometers Patent  
[NASA-CASE-XNP-01193] c 10 N71-16057  
Thin film capacitive bolometer and temperature sensor Patent  
[NASA-CASE-NPO-10607] c 09 N71-27232  
Wedge immersed thermistor bolometers  
[NASA-CASE-XGS-01245-1] c 35 N79-33449
- BOLTED JOINTS**  
Optimized bolted joint  
[NASA-CASE-LAR-13250-1] c 37 N86-27630  
Device for measuring hole elongation in a bolted joint  
[NASA-CASE-LAR-13453-1] c 37 N88-14361  
Clevis joint for deployable space structures  
[NASA-CASE-LAR-13898-1] c 37 N88-30130
- BOLTS**  
Gas actuated bolt disconnect Patent  
[NASA-CASE-XLA-00326] c 03 N70-34667  
Despin weight release Patent  
[NASA-CASE-XLA-00679] c 15 N70-38601  
Inspection gage for boss Patent  
[NASA-CASE-XMF-04966] c 14 N71-17658  
Split nut separation system Patent  
[NASA-CASE-XNP-06914] c 15 N71-21489  
Fastener stretcher  
[NASA-CASE-GSC-11149-1] c 15 N73-30457  
Optimized bolted joint  
[NASA-CASE-LAR-13250-1] c 37 N86-27630  
Bearing-bypass material system test  
[NASA-CASE-LAR-13458-1] c 35 N88-23967
- BONDING**  
Bonding graphite with fused silver chloride  
[NASA-CASE-XGS-00963] c 15 N69-39735
- Bonded joint and method — for reducing peak shear stress in adhesive bonds  
[NASA-CASE-LAR-10900-1] c 37 N74-23064  
Bonding method in the manufacture of continuous regression rate sensor devices  
[NASA-CASE-LAR-10337-1] c 24 N75-30260  
Strain arrestor plate for fused silica tile — bonding of thermal insulation to metallic plates or structural parts  
[NASA-CASE-MSC-14182-1] c 27 N76-14264  
Bonding machine for forming a solar array strip  
[NASA-CASE-NPO-13652-2] c 44 N79-24431  
Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-3] c 24 N79-25143  
Method of making a partial interlaminar separation composite system  
[NASA-CASE-LAR-12065-2] c 24 N81-33235  
Attachment system for silica tiles — thermal protection for space shuttle orbiter  
[NASA-CASE-MSC-18741-1] c 27 N82-29456  
Surface texturing of fluoropolymers  
[NASA-CASE-LEW-13028-1] c 27 N82-33521  
Heat sealable, flame and abrasion resistant coated fabric  
[NASA-CASE-MSC-18382-2] c 27 N84-14324  
Insulation bonding test system  
[NASA-CASE-MFS-25862-1] c 27 N85-20126  
Cryogenic insulation strength and bond tester  
[NASA-CASE-MFS-25910-1] c 39 N86-20841  
Method for forming hermetic seals  
[NASA-CASE-NPO-16423-1-CU] c 37 N87-21334  
Tool and process for miniature explosive joining of tubes  
[NASA-CASE-LAR-13662-1] c 37 N88-14359  
Method of insulating predesigned disbond areas into composite laminates  
[NASA-CASE-LAR-13225-1] c 24 N89-14258  
Method for maintaining precise suction strip porosities  
[NASA-CASE-LAR-13638-1] c 31 N90-19427  
New core design for use with precision composite reflectors  
[NASA-CASE-NPO-17858-1-CU] c 24 N90-26880
- BONES**  
Ultrasonic bone densitometer  
[NASA-CASE-MFS-20994-1] c 35 N75-12271  
Method and system for in vivo measurement of bone tissue using a two level energy source  
[NASA-CASE-MSC-14276-1] c 52 N77-14737  
Method of adhering bone to a rigid substrate using a graphite fiber reinforced bone cement  
[NASA-CASE-NPO-13764-1] c 27 N78-17215
- BOOLEAN ALGEBRA**  
VLSI binary updown counter  
[NASA-CASE-NPO-17205-1-CU] c 60 N90-21525
- BOOMS (EQUIPMENT)**  
Folding boom assembly Patent  
[NASA-CASE-XGS-00938] c 32 N70-41367  
Collapsible antenna boom and transmission line Patent  
[NASA-CASE-MFS-20068] c 07 N71-27191  
Minimech self-deploying boom mechanism  
[NASA-CASE-GSC-10566-1] c 15 N72-18477  
Mechanically extendible telescoping boom  
[NASA-CASE-NPO-11118] c 03 N72-25021  
Extended moment arm anti-spin device  
[NASA-CASE-LAR-12979-1] c 05 N85-21147  
Space station erectable manipulator placement system  
[NASA-CASE-MSC-21096-1] c 18 N89-12621
- BOOSTER RECOVERY**  
Recoverable rocket vehicle Patent  
[NASA-CASE-XMF-00389] c 31 N70-34176  
Recoverable single stage spacecraft booster Patent  
[NASA-CASE-XMF-01973] c 31 N70-41588  
Orbiter/launch system  
[NASA-CASE-LAR-12250-1] c 14 N81-26161  
A two-stage earth-to-orbit transport with translating oblique wings for booster recovery  
[NASA-CASE-LAR-14156-1] c 16 N90-16781
- BOOSTER ROCKET ENGINES**  
Segmented back-up bar Patent  
[NASA-CASE-XMF-00640] c 15 N70-39924  
Recoverable single stage spacecraft booster Patent  
[NASA-CASE-XMF-01973] c 31 N70-41588  
Space Shuttle with rail system and aft thrust structure securing solid rocket boosters to external tank  
[NASA-CASE-MFS-25853-1] c 16 N84-27784  
Earth-to-orbit vehicle providing a reusable orbital stage  
[NASA-CASE-LAR-13486-1] c 16 N90-22584
- BOOTS (FOOTWEAR)**  
Walking boot assembly  
[NASA-CASE-ARC-11101-1] c 54 N78-17675
- BOREHOLES**  
Method for machining holes in composite materials  
[NASA-CASE-MFS-28044-1] c 31 N87-25491
- BORIDES**  
Method of making a light weight battery plaque  
[NASA-CASE-LEW-13349-1] c 26 N84-22734  
Boron-containing organosilane polymers and ceramic materials thereof  
[NASA-CASE-ARC-11649-1-SB] c 27 N88-29040
- BORING MACHINES**  
Boring bar drive mechanism Patent  
[NASA-CASE-XLA-03661] c 15 N71-33518  
Borehole geological assessment  
[NASA-CASE-NPO-14231-1] c 46 N80-10709
- BORON**  
Radiation hardening of MOS devices by boron — for stabilizing gate threshold potential of field effect device  
[NASA-CASE-GSC-11425-1] c 76 N74-20329  
Boron-containing organosilane polymers and ceramic materials thereof  
[NASA-CASE-ARC-11649-2-SB] c 27 N90-21177
- BORON CARBIDES**  
Catalyst for growth of boron carbide single crystal whiskers  
[NASA-CASE-XHQ-03903] c 15 N69-21922
- BORON CHLORIDES**  
Preparation of B-trichloroborazine  
[NASA-CASE-ARC-11643-1-SB] c 23 N87-23698
- BORON COMPOUNDS**  
Boron-containing organosilane polymers and ceramic materials thereof  
[NASA-CASE-ARC-11649-1-SB] c 27 N88-29040
- BORON FLUORIDES**  
Boron trifluoride coatings for thermoplastic materials and method of applying same in glow discharge  
[NASA-CASE-ARC-11057-1] c 27 N78-31233
- BOROSILICATE GLASS**  
Method for repair of thin glass coatings — on space shuttle orbiter tiles  
[NASA-CASE-SC-11097-1] c 27 N82-33520
- BOULES**  
Ingot slicing machine and method  
[NASA-CASE-NPO-15483-1] c 37 N85-21650
- BOUNDARY LAYER CONTROL**  
Double hinged flap Patent  
[NASA-CASE-XLA-01290] c 02 N70-42016  
Aerodynamic side-force alleviator means  
[NASA-CASE-LAR-12326-1] c 02 N81-14968  
Active control of boundary layer transition and turbulence  
[NASA-CASE-LAR-13532-1] c 34 N86-26575
- BOUNDARY LAYER FLOW**  
Combined riblet and lebu drag reduction system  
[NASA-CASE-LAR-13286-1] c 02 N88-14071
- BOUNDARY LAYER SEPARATION**  
Tertiary flow injection thrust vectoring system Patent  
[NASA-CASE-MFS-20831] c 28 N71-29153  
Controlled separation combustor — airflow distribution in gas turbine engines  
[NASA-CASE-LEW-11593-1] c 20 N76-14190  
Self stabilizing sonic inlet  
[NASA-CASE-LEW-11890-1] c 05 N79-24976
- BOUNDARY LAYER TRANSITION**  
Detection of the transitional layer between laminar and turbulent flow areas on a wing surface — using an accelerometer to measure pressure levels during wind tunnel tests  
[NASA-CASE-LAR-12261-1] c 02 N80-20224  
Active control of boundary layer transition and turbulence  
[NASA-CASE-LAR-13532-1] c 34 N86-26575  
Crossflow vorticity sensor  
[NASA-CASE-LAR-13436-1-CU] c 02 N88-23759  
Method for laminar boundary layer transition visualization in flight  
[NASA-CASE-LAR-13554-1] c 02 N89-12551
- BOUNDARY LAYERS**  
Traversing probe Patent  
[NASA-CASE-XFR-02007] c 12 N71-24692  
Apparatus for sensing temperature  
[NASA-CASE-XLE-05230] c 14 N72-27410
- BOXES (CONTAINERS)**  
Storage container for electronic devices Patent  
[NASA-CASE-MFS-20075] c 09 N71-26133  
Double window viewing chamber assembly  
[NASA-CASE-MFS-28057-1] c 09 N87-14355
- BRACKETS**  
Electrical servo actuator bracket — fuel control valves on jet engines  
[NASA-CASE-FRC-11044-1] c 37 N81-33483  
Airtail flutter model suspension system  
[NASA-CASE-LAR-13522-1-SB] c 09 N87-25334  
Locking hinge  
[NASA-CASE-MSC-21056-1] c 18 N88-23827
- BRAILLE**  
Braille reading system  
[NASA-CASE-LAR-13306-1] c 62 N87-29372

## BRAKES

- Preloaded brake disc  
[NASA-CASE-MSC-21132-1] c 37 N88-29181
- BRAKES (FOR ARRESTING MOTION)**
- Frangible tube energy dissipation Patent  
[NASA-CASE-XLA-00754] c 15 N70-34850
- Emergency escape system Patent  
[NASA-CASE-XKS-07814] c 15 N71-27067
- Sprag solenoid brake — development and operations of electrically controlled brake  
[NASA-CASE-MFS-21846-1] c 37 N74-26976
- Reel safety brake  
[NASA-CASE-GSC-11960-1] c 37 N77-14479
- Motion restraining device  
[NASA-CASE-NPO-13619-1] c 37 N78-16369
- Moving body velocity arresting line — stainless steel cables with energy absorbing sleeves  
[NASA-CASE-LAR-12372-1] c 37 N82-18601
- Bidirectional drive and brake mechanism  
[NASA-CASE-MSC-21540-1] c 37 N90-26342

## BRAKING

- Regenerative braking system Patent  
[NASA-CASE-XMF-01096] c 10 N71-16030
- Linear magnetic brake with two windings Patent  
[NASA-CASE-XLE-05079] c 15 N71-17652
- Anemometer with braking mechanism Patent  
[NASA-CASE-XMF-05224] c 14 N71-23726

## BRAZING

- Pretreatment method for anti-wettable materials  
[NASA-CASE-XMS-03537] c 15 N69-21471
- Process for applying a protective coating for salt bath brazing Patent  
[NASA-CASE-XLE-00046] c 15 N70-33311
- Method of joining aluminum to stainless steel Patent  
[NASA-CASE-MFS-07369] c 15 N71-20443
- Brazing alloy Patent  
[NASA-CASE-XNP-03063] c 17 N71-23365
- Brazing alloy binder  
[NASA-CASE-XMF-05868] c 26 N75-27125
- Brazing alloy composition  
[NASA-CASE-XMF-06053] c 26 N75-27126
- Brazing alloy  
[NASA-CASE-XNP-03878] c 26 N75-27127
- Method of fluxless brazing and diffusion bonding of aluminum containing components  
[NASA-CASE-MSC-14435-1] c 37 N76-18455

## BREATHING APPARATUS

- Transfer valve Patent  
[NASA-CASE-XAC-01158] c 15 N71-23051
- Self-contained breathing apparatus  
[NASA-CASE-MSC-14733-1] c 54 N76-24900
- Portable breathing system — a breathing apparatus using a rebreathing system of heat exchangers for carbon dioxide removal  
[NASA-CASE-MSC-16182-1] c 54 N80-10799

## BRICKS

- Foldable construction block  
[NASA-CASE-MSC-12233-2] c 32 N73-13921

## BRIDGMAN METHOD

- Apparatus and procedure to detect a liquid-solid interface during crystal growth in a bridgman furnace  
[NASA-CASE-LAR-13597-1-CU] c 25 N87-23713

## BRIGHTNESS

- Light intensity modulator controller Patent  
[NASA-CASE-XMS-04300] c 09 N71-19479

## BRIGHTNESS DISCRIMINATION

- Television signal processing system Patent  
[NASA-CASE-NPO-10140] c 07 N71-24742
- Visual examination apparatus  
[NASA-CASE-ARC-10329-1] c 05 N73-26072
- Illumination control apparatus for compensating solar light  
[NASA-CASE-KSC-11010-1] c 74 N79-12890

## BRITTLENESS

- Rock sampling — apparatus for controlling particle size  
[NASA-CASE-XNP-10007-1] c 46 N74-23068
- Rock sampling — method for controlling particle size distribution  
[NASA-CASE-XNP-09755] c 46 N74-23069
- Elastomer coated filler and composites thereof comprising at least 60% by weight of a hydrated filler and an elastomer containing an acid substituent  
[NASA-CASE-NPO-14857-1] c 27 N83-19900

## BROADBAND

- Broadband choke for antenna structure  
[NASA-CASE-XMS-05303] c 07 N69-27462
- Flexible blade antenna Patent  
[NASA-CASE-MSC-12101] c 09 N71-18720
- Broadband frequency discriminator Patent  
[NASA-CASE-NPO-10096] c 07 N71-24583
- Broadband microwave waveguide window Patent  
[NASA-CASE-XNP-08880] c 09 N71-24808
- High-gain, broadband traveling wave maser Patent  
[NASA-CASE-NPO-10548] c 16 N71-24831

- Wideband VCO with high phase stability Patent  
[NASA-CASE-XLA-03893] c 10 N71-27271
- Composite antenna feed  
[NASA-CASE-GSC-11046-1] c 07 N73-28013
- Multifrequency broadband polarized horn antenna  
[NASA-CASE-NPO-14588-1] c 32 N81-25278
- Broadband optical radiation detector  
[US-PATENT-4,262,198] c 74 N83-19597
- Method of measuring sea surface water temperature with a satellite including wideband passive synthetic-aperture multichannel receiver  
[NASA-CASE-NPO-15651-1] c 43 N85-21723
- A compact fast wide angle broad band spectrometer optical system  
[NASA-CASE-NPO-17562-1-CU] c 74 N89-24153
- Multispectral variable magnification glancing incidence x ray telescope  
[NASA-CASE-MFS-28013-4] c 89 N90-27595

## BROADBAND AMPLIFIERS

- Broadband stable power multiplier Patent  
[NASA-CASE-XNP-10854] c 10 N71-26331
- Cascaded complementary pair broadband transistor amplifiers Patent  
[NASA-CASE-NPO-10003] c 10 N71-26415

## BROADCASTING

- Vehicle locating system utilizing AM broadcasting station carriers  
[NASA-CASE-NPO-13217-1] c 32 N75-26194

## BROMINATION

- Toughening reinforced epoxy composites with brominated polymeric additives  
[NASA-CASE-ARC-11427-1] c 24 N86-19380
- Brominated graphite fibers and method of producing the same  
[NASA-CASE-LEW-14698-1] c 24 N88-29888
- Brominated graphitized carbon fibers  
[NASA-CASE-LEW-14698-2] c 27 N90-15262

## BROMINE

- Hydrogen-bromine secondary battery  
[NASA-CASE-NPO-13237-1] c 44 N76-18641
- Brominated graphitized carbon fibers  
[NASA-CASE-LEW-14698-2] c 27 N90-15262

## BROMINE COMPOUNDS

- Toughening reinforced epoxy composites with brominated polymeric additives  
[NASA-CASE-ARC-11427-2] c 27 N86-27451

## BRONZES

- Thin wire pointing method  
[NASA-CASE-NPO-15789-1] c 31 N83-19947

## BRUSHES

- Method of making impurity-type semiconductor electrical contacts Patent  
[NASA-CASE-XMF-01016] c 26 N71-17818

## BRUSHES (ELECTRICAL CONTACTS)

- Shaft transducer having dc output proportional to angular velocity  
[NASA-CASE-NPO-15706-1] c 35 N84-28017

## BUBBLES

- Method of forming frozen spheres in a force-free drop tower  
[NASA-CASE-NPO-14845-1] c 27 N82-28442
- Acoustic bubble removal method  
[NASA-CASE-NPO-15334-1] c 71 N83-35781

## BUCKLING

- Miniature vibration isolator Patent  
[NASA-CASE-XLA-01019] c 15 N70-40156
- Compression test assembly  
[NASA-CASE-LAR-10440-1] c 14 N73-32323

## BUFFER STORAGE

- Data handling system based on source significance, storage availability and data received from the source Patent Application  
[NASA-CASE-XNP-04162-1] c 08 N70-34675
- Data transfer system Patent  
[NASA-CASE-NPO-12107] c 08 N71-27255
- Buffered analog converter  
[NASA-CASE-KSC-10397] c 08 N72-25206
- Common data buffer system — communication with computational equipment utilized in spacecraft operations  
[NASA-CASE-KSC-11048-1] c 62 N81-24779
- Braille reading system  
[NASA-CASE-LAR-13306-1] c 82 N87-29372

## BUFFERS (CHEMISTRY)

- Static continuous electrophoresis device  
[NASA-CASE-MFS-25306-1] c 25 N83-13187

## BUILDINGS

- Foldable construction block  
[NASA-CASE-MSC-12233-1] c 15 N72-25454

## BULBS

- External bulb variable volume maser  
[NASA-CASE-GSC-12334-1] c 36 N79-14362

## BULKHEADS

- Tank construction for space vehicles Patent  
[NASA-CASE-XMF-01899] c 31 N70-41948

- Tube coupling device  
[NASA-CASE-MFS-25964-2] c 37 N87-22977

## BUOYANCY

- Inflatable radar reflector unit Patent  
[NASA-CASE-XMS-00893] c 07 N70-40063

## BURNERS

- Micronized coal burner facility  
[NASA-CASE-LEW-13426-1] c 25 N84-16276

## BURNING RATE

- Burning rate control of solid propellants Patent  
[NASA-CASE-XLE-03494] c 27 N71-21819
- Burn rate testing apparatus  
[NASA-CASE-XMS-09690] c 33 N72-25913
- Nitramine propellants — gun propellant burning rate  
[NASA-CASE-NPO-14103-1] c 28 N78-31255

## BURNOUT

- Spherically-shaped rocket motor Patent  
[NASA-CASE-XHQ-01897] c 28 N70-35381

## BURNS (INJURIES)

- Medical diagnosis system and method with multispectral imaging — depth of burns and optical density of the skin  
[NASA-CASE-NPO-14402-1] c 52 N81-27783

## BUS CONDUCTORS

- Test apparatus for locating shorts during assembly of electrical buses  
[NASA-CASE-ARC-11116-1] c 33 N82-24420

## BUSHINGS

- Overcenter collet space station truss fastener  
[NASA-CASE-MSC-21504-1] c 18 N90-26859

## BUTANES

- Production of butanol by fermentation in the presence of cocultures of clostridium  
[NASA-CASE-NPO-16203-1] c 23 N85-35227

## BUTT JOINTS

- Channel-type shell construction for rocket engines and the like Patent  
[NASA-CASE-XLE-00144] c 28 N70-34860
- Segmented back-up bar Patent  
[NASA-CASE-XMF-00640] c 15 N70-39924
- Apparatus for welding sheet material — butt joints  
[NASA-CASE-XMS-01330] c 37 N75-27376

## BUTTERFLY VALVES

- Flexible seal for valves Patent  
[NASA-CASE-XLE-00101] c 15 N70-33376
- Hybrid butterfly valve  
[NASA-CASE-SSC-00004] c 37 N90-15443

## BUTYRIC ACID

- Production of butanol by fermentation in the presence of cocultures of clostridium  
[NASA-CASE-NPO-16203-1] c 23 N85-35227

## BYPASSES

- Low power drain semi-conductor circuit  
[NASA-CASE-XGS-04999] c 09 N69-24317
- Helical coaxial resonator RF filter  
[NASA-CASE-XGS-02816] c 07 N69-24323
- Current regulating voltage divider  
[NASA-CASE-MFS-20935] c 09 N71-34212
- Use of unilluminated solar cells as shunt diodes for a solar array  
[NASA-CASE-GSC-10344-1] c 03 N72-27053
- Shunt regulation electric power system  
[NASA-CASE-GSC-10135] c 33 N78-17296
- Thrust reverser for a long duct fan engine — for turbofan engines  
[NASA-CASE-LEW-13199-1] c 07 N82-26293
- Method of making an ion beam sputter-etched ventricular catheter for hydrocephalus shunt  
[NASA-CASE-LEW-13107-2] c 52 N84-23095

## C

## CABLE FORCE RECORDERS

- Winch having cable position and load indicators Patent  
[NASA-CASE-MSC-12052-1] c 15 N71-24599

## CABLES

- Cable restraint  
[NASA-CASE-LAR-10129-1] c 15 N73-25512
- Deployable flexible tunnel  
[NASA-CASE-MFS-22636-1] c 37 N76-22540
- Cable suspended windmill  
[NASA-CASE-LAR-13434-1] c 37 N90-23742

## CABLES (ROPES)

- High-voltage cable Patent  
[NASA-CASE-XNP-00738] c 09 N70-38201
- Cable arrangement for rigid tethering Patent  
[NASA-CASE-XLA-02332] c 32 N71-17609
- Extensible cable support Patent  
[NASA-CASE-XMF-07587] c 15 N71-18701
- Satellite appendage tie down cord Patent  
[NASA-CASE-XGS-02554] c 31 N71-21064
- Quick attach mechanism Patent  
[NASA-CASE-XFR-05421] c 15 N71-22994
- Flexible/rigidifiable cable assembly  
[NASA-CASE-MSC-13512-1] c 15 N72-22485

- Cable stabilizer for open shaft cable operated elevators  
[NASA-CASE-KSC-10513] c 15 N72-25453
- Reefing system  
[NASA-CASE-LAR-10129-2] c 37 N74-20063
- Emergency descent device  
[NASA-CASE-MFS-23074-1] c 54 N77-21844
- Belt for transmitting power from a cogged driving member to a cogged driven member  
[NASA-CASE-GSC-12289-1] c 37 N80-32717
- Moving body velocity arresting line — stainless steel cables with energy absorbing sleeves  
[NASA-CASE-LAR-12372-1] c 37 N82-18601
- CADMIUM SULFIDES**
- High field CdS detector for infrared radiation  
[NASA-CASE-LAR-11027-1] c 35 N74-18088
- CDS solid state phase insensitive ultrasonic transducer — annealing cadmium sulfide crystals  
[NASA-CASE-LAR-12304-1] c 35 N80-20559
- Liquid crystal light valve structures  
[NASA-CASE-MSC-20036-1] c 76 N85-33826
- CALCIUM**
- Ultrasonic bone densitometer  
[NASA-CASE-MFS-20994-1] c 35 N75-12271
- CALCIUM FLUORIDES**
- Bonded solid lubricant coating Patent  
[NASA-CASE-XMS-00259] c 18 N70-36400
- Method of making self lubricating fluoride-metal composite materials Patent  
[NASA-CASE-XLE-08511-2] c 18 N71-16105
- CALCIUM OXIDES**
- Process for the preparation of calcium superoxide  
[NASA-CASE-ARC-11053-1] c 25 N79-10162
- CALCIUM PHOSPHATES**
- Process for the preparation of brushite crystals  
[NASA-CASE-ERC-10338] c 04 N72-33072
- CALCULATORS**
- Sun angle calculator  
[NASA-CASE-MSC-12617-1] c 35 N76-28552
- CALCULI**
- Apparatus for disintegrating kidney stones  
[NASA-CASE-GSC-12652-1] c 52 N84-34913
- CALIBRATING**
- Self-calibrating displacement transducer Patent  
[NASA-CASE-XLA-00781] c 09 N71-22999
- Pressure transducer calibrator Patent  
[NASA-CASE-XNP-01660] c 14 N71-23036
- Apparatus for testing a pressure responsive instrument Patent  
[NASA-CASE-XMF-04134] c 14 N71-23755
- Phonocardiogram simulator Patent  
[NASA-CASE-XKS-10804] c 05 N71-24606
- Laser calibrator Patent  
[NASA-CASE-XLA-03410] c 16 N71-25914
- Radar calibration sphere  
[NASA-CASE-XLA-11154] c 07 N72-21117
- Gauge calibration by diffusion  
[NASA-CASE-XGS-07752] c 14 N73-30390
- System for calibrating pressure transducer  
[NASA-CASE-LAR-10910-1] c 35 N74-13132
- In situ transfer standard for ultrahigh vacuum gage calibration  
[NASA-CASE-LAR-10862-1] c 35 N74-15092
- Ergometer calibrator — for any ergometer utilizing rotating shaft  
[NASA-CASE-MFS-21045-1] c 35 N75-15932
- Ultrasonic calibration device — for producing changes in acoustic attenuation and phase velocity  
[NASA-CASE-LAR-11435-1] c 35 N76-15432
- High temperature strain gage calibration fixture  
[NASA-CASE-LAR-11500-1] c 35 N76-24523
- Electronically scanned pressure sensor module with in situ calibration capability  
[NASA-CASE-LAR-12230-1] c 35 N79-14347
- Calibrating pressure switch  
[NASA-CASE-XMF-04494-1] c 33 N79-33392
- Electromagnetic power absorber  
[NASA-CASE-NPO-13830-1] c 32 N80-14281
- Automatic flowmeter calibration system  
[NASA-CASE-KSC-11076-1] c 34 N81-26402
- Method and apparatus for precision control of radiometer  
[NASA-CASE-NPO-15398-1] c 35 N84-22931
- Strain gage calibration  
[NASA-CASE-LAR-12743-1] c 35 N84-28019
- Means and method for calibrating a photon detector utilizing electron-photon coincidence  
[NASA-CASE-NPO-15644-1] c 35 N84-33767
- Method and apparatus for self-calibration and phasing of array antenna  
[NASA-CASE-NPO-15920-1] c 33 N85-21493
- Ultrasonic angle beam standard reflector — ultrasonic nondestructive inspection  
[NASA-CASE-LAR-13153-1] c 71 N86-21276
- Simulator scene display evaluation device  
[NASA-CASE-ARC-11504-1] c 09 N86-32447
- Spinning disk calibration method and apparatus for laser Doppler velocimeter  
[NASA-CASE-ARC-11510-1] c 35 N86-32697
- Antimultipath communication by injecting tone into null in signal spectrum  
[NASA-CASE-NPO-18414-1-CU] c 32 N87-25511
- Miniature remote dead weight calibrator  
[NASA-CASE-LAR-13564-1] c 35 N87-25558
- Method and apparatus for applying a mechanical force to surface  
[NASA-CASE-LAR-14009-1] c 37 N90-27115
- CALORIMETERS**
- Constant temperature heat sink for calorimeters Patent  
[NASA-CASE-XMF-04208] c 33 N71-29051
- Heat flow calorimeter — measures output of Ni-Cd batteries  
[NASA-CASE-GSC-11434-1] c 34 N74-27859
- Containerless high temperature calorimeter apparatus  
[NASA-CASE-MFS-23923-1] c 35 N81-19426
- CAMERA SHUTTERS**
- Electrically-operated rotary shutter Patent  
[NASA-CASE-XNP-00637] c 14 N70-40273
- Fast opening diaphragm Patent  
[NASA-CASE-XLA-03660] c 15 N71-21060
- Cyclically operable optical shutter  
[NASA-CASE-NPO-10758] c 14 N73-14427
- Rotary solenoid shutter drive assembly and rotary inertia damper and stop plate assembly — for use with cameras mounted in satellites  
[NASA-CASE-GSC-11560-1] c 33 N74-20861
- CAMERAS**
- Measurement of time differences between luminous events Patent  
[NASA-CASE-XLA-01987] c 23 N71-23976
- Image magnification adapter for cameras Patent  
[NASA-CASE-XMF-03844-1] c 14 N71-26474
- Film feed camera having a detent means Patent  
[NASA-CASE-LAR-10688] c 14 N71-28935
- Laser camera and diffusion filter therefore Patent  
[NASA-CASE-NPO-10417] c 16 N71-33410
- Optical binocular scanning apparatus  
[NASA-CASE-NPO-11002] c 14 N72-22441
- On-film optical recording of camera lens settings  
[NASA-CASE-MSC-12363-1] c 14 N73-26431
- Exposure interlock for oscilloscope cameras  
[NASA-CASE-LAR-10319-1] c 14 N73-32322
- Real time moving scene holographic camera system  
[NASA-CASE-MFS-21087-1] c 35 N74-17153
- Automatic focus control for facsimile cameras  
[NASA-CASE-LAR-11213-1] c 35 N75-15014
- Spectrometer integrated with a facsimile camera  
[NASA-CASE-LAR-11207-1] c 35 N75-19613
- Real time, large volume, moving scene holographic camera system  
[NASA-CASE-MFS-22537-1] c 35 N75-27328
- Holographic motion picture camera with Doppler shift compensation  
[NASA-CASE-MFS-22517-1] c 35 N76-18402
- CAMS**
- Controlled caging and uncaging mechanism  
[NASA-CASE-GSC-11063-1] c 37 N77-27400
- Cam-operated pitch-change apparatus  
[NASA-CASE-LEW-13050-1] c 07 N79-14095
- CAM controlled retractable door latch  
[NASA-CASE-MSC-20304-1] c 37 N82-31690
- CANARD CONFIGURATIONS**
- Thrust and direction control apparatus Patent  
[NASA-CASE-XLE-03583] c 31 N71-17629
- Supersonic transport — using canard surfaces  
[NASA-CASE-LAR-11932-1] c 05 N78-32086
- Missile rolling tail brake torque system — simulating bearing friction on canard controlled missiles  
[NASA-CASE-LAR-12751-1] c 15 N84-16231
- CANCER**
- Coupling apparatus for ultrasonic medical diagnostic system  
[NASA-CASE-NPO-13935-1] c 52 N79-14751
- Hyperthermia heating apparatus — cancer therapy  
[NASA-CASE-NPO-14549-2] c 52 N82-33996
- CANNING**
- One step HIP canning of powder metallurgy composites  
[NASA-CASE-LEW-14719-1] c 24 N90-23493
- CANOPIES**
- Transparent fire resistant polymeric structures  
[NASA-CASE-ARC-10813-1] c 27 N76-16230
- Method for refurbishing and processing parachutes  
[NASA-CASE-KSC-11042-1] c 09 N82-29330
- Aircraft canopy lock  
[NASA-CASE-FRC-11065-1] c 05 N83-19737
- CANS**
- Canister closing device Patent  
[NASA-CASE-XLA-01446] c 15 N71-21528
- Extrusion can  
[NASA-CASE-NPO-10812] c 15 N73-13464
- Improved process for HIP canning of composites  
[NASA-CASE-LEW-14990-1-CU] c 24 N90-15147
- CANTILEVER BEAMS**
- Inflatable support structure Patent  
[NASA-CASE-XLA-01731] c 32 N71-21045
- Cantilever mounted resilient pad gas bearing  
[NASA-CASE-LEW-12569-1] c 37 N79-10418
- CANTILEVER MEMBERS**
- Deployable solar cell array  
[NASA-CASE-NPO-10883] c 31 N72-22874
- Miniature biaxial strain transducer  
[NASA-CASE-LAR-11648-1] c 35 N77-14407
- CAPACITANCE**
- Device for determining the accuracy of the flare on a flared tube  
[NASA-CASE-XKS-03495] c 14 N69-39785
- Floating two force component measuring device Patent  
[NASA-CASE-XAC-04885] c 14 N71-23790
- Thin film capacitive bolometer and temperature sensor Patent  
[NASA-CASE-NPO-10607] c 09 N71-27232
- Capacitive tank gaging apparatus being independent of liquid distribution  
[NASA-CASE-MFS-21629] c 14 N72-22442
- Capacitance multiplier and filter synthesizing network  
[NASA-CASE-NPO-11948-1] c 33 N74-32712
- Direct reading inductance meter  
[NASA-CASE-NPO-13792-1] c 35 N77-32455
- Dynamic capacitor having a peripherally driven element and system incorporating the same  
[NASA-CASE-XNP-02899-1] c 33 N79-21265
- Programmable electronic synthesized capacitance  
[NASA-CASE-GSC-12961-1] c 33 N87-22895
- Ice detector  
[NASA-CASE-LAR-13776-1] c 35 N88-29149
- CAPACITANCE SWITCHES**
- Electrical discharge apparatus for forming Patent  
[NASA-CASE-XMF-00375] c 15 N70-34249
- Ultra-long monostable multivibrator employing bistable semiconductor switch to allow charging of timing circuit Patent  
[NASA-CASE-XAC-10607] c 10 N71-23669
- CAPACITORS**
- Temperature sensitive capacitor device  
[NASA-CASE-XNP-09750] c 14 N69-39937
- Space vehicle electrical system Patent  
[NASA-CASE-XMF-00517] c 03 N70-34157
- Apparatus having coaxial capacitor structure for measuring fluid density Patent  
[NASA-CASE-XLE-00143] c 14 N70-36618
- Meteoroid sensing apparatus having a coincidence network connected to a pair of capacitors Patent  
[NASA-CASE-XLE-01246] c 14 N71-10797
- Capacitor and method of making same Patent  
[NASA-CASE-LEW-10364-1] c 09 N71-13522
- Measurement of time differences between luminous events Patent  
[NASA-CASE-XLA-01987] c 23 N71-23976
- Ripple indicator  
[NASA-CASE-KSC-10162] c 09 N72-11225
- Thermoelectric radiometer utilizing polymer film  
[NASA-CASE-ARC-10138-1] c 14 N72-24477
- Screened circuit capacitors  
[NASA-CASE-LAR-10294-1] c 26 N72-28762
- Micrometeoroid analyzer  
[NASA-CASE-ARC-10443-1] c 14 N73-20477
- Insulated electrocardiographic electrodes — without paste electrolyte  
[NASA-CASE-MSC-14339-1] c 05 N75-24716
- High temperature beryllium oxide capacitor  
[NASA-CASE-LEW-11938-1] c 33 N76-15373
- Energy storage apparatus  
[NASA-CASE-GSC-12030-1] c 44 N78-24608
- Regulated high efficiency, lightweight capacitor-diode multiplier dc to dc converter  
[NASA-CASE-LEW-12791-1] c 33 N78-32341
- Dynamic capacitor having a peripherally driven element and system incorporating the same  
[NASA-CASE-XNP-02899-1] c 33 N79-21265
- Laser activated MTOS microwave device  
[NASA-CASE-NPO-18112-1] c 33 N86-19516
- Water-absorbing capacitor system for measuring relative humidity  
[NASA-CASE-NPO-16544-1-CU] c 35 N87-22953
- CAPILLARY FLOW**
- Capillary radiator Patent  
[NASA-CASE-XLE-03307] c 33 N71-14035
- Fluid lubricant system Patent  
[NASA-CASE-XNP-03972] c 15 N71-23048
- Soldering device Patent  
[NASA-CASE-XLA-08911] c 15 N71-27214
- Capillary flow weld-bonding  
[NASA-CASE-LAR-11726-1] c 37 N76-27568



- Polymeric heat pipe wick  
[NASA-CASE-GSC-13018-1] c 34 N88-29133  
Capillary heat transport and fluid management device  
[NASA-CASE-MFS-28217-1] c 34 N89-14392

**CAPILLARY TUBES**

- Fluid flow restrictor Patent  
[NASA-CASE-NPO-10117] c 15 N71-15608  
Water separating system Patent  
[NASA-CASE-XMS-13052] c 14 N71-20427  
Mercury capillary interrupter Patent  
[NASA-CASE-XNP-02251] c 12 N71-20896  
Diffused waveguiding capillary tube with distributed feedback for a gas laser  
[NASA-CASE-NPO-13544-1] c 36 N76-18428  
Ceramic heat pipe wick  
[NASA-CASE-GSC-13199-1] c 27 N90-23541

**CARBAZOLES**

- Method of using photovoltaic cell using poly-N-vinylcarbazole complex Patent  
[NASA-CASE-NPO-10373] c 03 N71-18698

**CARBIDES**

- Absorbable-susceptor joining of ceramic surfaces  
[NASA-CASE-NPO-15640-1] c 27 N84-22748  
Carbide-fluoride-silver self-lubricating composite  
[NASA-CASE-LEW-14196-2] c 37 N87-25585

**CARBOHYDRATES**

- Decontamination of petroleum products Patent  
[NASA-CASE-XNP-03835] c 06 N71-23499

**CARBON**

- Low density bismaleimide-carbon microballoon composites --- aircraft and submarine compartment safety  
[NASA-CASE-ARC-11040-2] c 24 N78-27184  
Electrophotolysis oxidation system for measurement of organic concentration in water  
[NASA-CASE-MS-16497-1] c 25 N82-12166  
Apparatus and method for destructive removal of particles contained in flowing fluid  
[NASA-CASE-NPO-15426-1] c 35 N84-17555  
Chromium electrodes for REDOX cells  
[NASA-CASE-LEW-13653-1] c 44 N84-28205  
Deposition of diamondlike carbon films  
[NASA-CASE-LEW-14080-1] c 31 N85-20153  
Carbon granule probe microphone for leak detection --- recovery boilers  
[NASA-CASE-NPO-16027-1] c 35 N85-21597  
Textured carbon surfaces on copper by sputtering  
[NASA-CASE-LEW-14130-1] c 31 N86-32587  
Krypton based adsorption type cryogenic refrigerator  
[NASA-CASE-NPO-17334-1-CU] c 31 N88-23917  
Cryogenic regenerator including saran-carbon heat conduction matrix  
[NASA-CASE-NPO-17291-1-CU] c 34 N88-23946

**CARBON ARCS**

- Water cooled contactor for anode in carbon arc mechanism  
[NASA-CASE-XMS-03700] c 15 N69-24266  
Diamondlike flakes  
[NASA-CASE-LEW-13837-2] c 24 N85-21267

**CARBON COMPOUNDS**

- Method of coating carbonaceous base to prevent oxidation destruction and coated base Patent  
[NASA-CASE-XLA-00284] c 15 N71-16075  
Surfactant-assisted liquefaction of particulate carbonaceous substances  
[NASA-CASE-NPO-13904-1] c 25 N79-11152  
Diamondlike flake composites  
[NASA-CASE-LEW-13837-1] c 24 N84-22695

**CARBON DIOXIDE**

- Techniques for insulating cryogenic fuel containers Patent  
[NASA-CASE-XLA-01967] c 31 N70-42015  
Miniature carbon dioxide sensor and methods  
[NASA-CASE-MS-13332-1] c 14 N72-21408  
Metabolic rate meter and method  
[NASA-CASE-MS-12239-1] c 52 N79-21750

**CARBON DIOXIDE LASERS**

- Repetitively pulsed, wavelength selective laser Patent  
[NASA-CASE-ERC-10178] c 16 N71-24832  
Power supply for carbon dioxide lasers  
[NASA-CASE-GSC-11222-1] c 16 N73-32391  
Stark-effect modulation of CO<sub>2</sub> laser with NH<sub>2</sub>D  
[NASA-CASE-NPO-11945-1] c 36 N76-18427

**CARBON DIOXIDE REMOVAL**

- Catalyst cartridge for carbon dioxide reduction unit  
[NASA-CASE-LAR-10551-1] c 25 N74-12813  
Regenerable device for scrubbing breathable air of CO<sub>2</sub> and moisture without special heat exchanger equipment  
[NASA-CASE-MS-14771-1] c 54 N77-32722  
Portable breathing system --- a breathing apparatus using a rebreathing system of heat exchangers for carbon dioxide removal  
[NASA-CASE-MS-16182-1] c 54 N80-10799  
Method and apparatus for bio-regenerative life support system  
[NASA-CASE-MS-21629-1] c 54 N89-29027

**CARBON FIBER REINFORCED PLASTICS**

- Low density bismaleimide-carbon microballoon composites  
[NASA-CASE-ARC-11040-1] c 24 N79-16915  
Circumferential shaft seal  
[NASA-CASE-LEW-12119-1] c 37 N80-28711  
Curing agent for polyepoxides and epoxy resins and composites cured therewith --- preventing carbon fiber release  
[NASA-CASE-LEW-13226-1] c 27 N81-17260

**CARBON FIBERS**

- Method and device for detection of a substance --- determining carbon fiber release in fire situations  
[NASA-CASE-NPO-14940-1] c 33 N83-31954  
Mixed polyvalent-monovalent metal coating for carbon-graphite fibers  
[NASA-CASE-NPO-14987-1] c 24 N83-33950  
High resistance and raised modulus carbon fibers  
[NASA-TM-76884] c 24 N85-25436  
Brominated graphite fibers and method of producing the same  
[NASA-CASE-LEW-14698-1] c 24 N88-29888  
Brominated graphitized carbon fibers  
[NASA-CASE-LEW-14698-2] c 27 N90-15262

**CARBON MONOXIDE**

- Carbon monoxide monitor --- using real time operation  
[NASA-CASE-MFS-22060-1] c 35 N75-29380  
Catalyst for carbon monoxide oxidation  
[NASA-CASE-LAR-14155-1-SB] c 25 N90-23517

**CARBON-CARBON COMPOSITES**

- Oxidation resistant slurry coating for carbon-based materials  
[NASA-CASE-LEW-13923-1] c 26 N85-35267  
Lightweight piston  
[NASA-CASE-LAR-13150-1] c 24 N87-27742  
Composite piston  
[NASA-CASE-LAR-13435-1] c 37 N88-23981  
Reusable high-temperature heat pipes and heat pipe panels  
[NASA-CASE-LAR-13761-1] c 34 N90-20323  
Lightweight piston architecture  
[NASA-CASE-LAR-13926-1] c 37 N90-22042  
Braided composite fasteners and method for producing same  
[NASA-CASE-LAR-14062-1] c 37 N90-27114

**CARBONACEOUS MATERIALS**

- Fluidized bed desulfurization  
[NASA-CASE-NPO-15924-1] c 25 N85-35253

**CARBONATES**

- Polyurethanes of fluorine containing polycarbonates  
[NASA-CASE-MFS-10512] c 06 N73-30099  
Synthesis of dawsonites --- for use in fire extinguishing operations  
[NASA-CASE-ARC-11326-1] c 25 N83-33977

**CARBONIZATION**

- Method of carbonizing polyacrylonitrile fibers  
[NASA-CASE-ARC-11261-1] c 24 N83-25789

**CARBONYL COMPOUNDS**

- Coal desulfurization --- using iron pentacarbonyl  
[NASA-CASE-NPO-14272-1] c 25 N81-33246  
Polyimides containing carbonyl and ether connecting groups  
[NASA-CASE-LAR-13633-1] c 27 N87-24575  
Polyimides with carbonyl and ether connecting groups between the aromatic rings  
[NASA-CASE-LAR-14001-1] c 27 N90-15260

**CARBORANE**

- Process for the preparation of polycarbonylphosphazenes --- thermal insulation  
[NASA-CASE-ARC-11176-2] c 27 N81-27271  
Carboranylclotriphosphazenes and their polymers --- thermal insulation  
[NASA-CASE-ARC-11176-1] c 27 N82-18389  
Carboranyl(methylene-substituted phosphazenes and polymers thereof  
[NASA-CASE-ARC-11370-1] c 27 N84-22750

**CARBOXYL GROUP**

- Novel polycarboxylic prepolymeric materials and polymers thereof Patent  
[NASA-CASE-NPO-10596] c 06 N71-25929

**CARBOXYLIC ACIDS**

- Preparation of polyimides from mixtures of monomeric diamines and esters of polycarboxylic acids  
[NASA-CASE-LEW-11325-1] c 06 N73-27980  
Fluorinated esters of polycarboxylic acids  
[NASA-CASE-MFS-21040-1] c 06 N73-30098  
Metal phthalocyanine polymers  
[NASA-CASE-ARC-11405-1] c 27 N84-27884  
Alkaline battery containing a separator of a cross-linked copolymer of vinyl alcohol and unsaturated carboxylic acid  
[NASA-CASE-LEW-13102-1] c 33 N85-29144  
Metal phthalocyanine intermediates for the preparation of polymers  
[NASA-CASE-ARC-11405-2] c 27 N86-19455

**CARCINOGENS**

- Apparatus for producing three-dimensional recordings of fluorescence spectra Patent  
[NASA-CASE-XGS-01231] c 14 N70-41676

**CARDIAC VENTRICLES**

- Contour detector and data acquisition system for the left ventricular outline  
[NASA-CASE-ARC-10985-1] c 52 N79-10724

**CARDIOGRAPHY**

- Digital cardiometer system Patent  
[NASA-CASE-XMS-02399] c 05 N71-22896  
Reference apparatus for medical ultrasonic transducer  
[NASA-CASE-ARC-10753-1] c 54 N75-27760

**CARDIOLOGY**

- Ratemeter  
[NASA-CASE-MFS-20418] c 14 N73-24473  
Myocardium wall thickness transducer and measuring method  
[NASA-CASE-NPO-13644-1] c 52 N76-29895

**CARDIOTACHOMETERS**

- Digital computing cardiometer  
[NASA-CASE-MFS-20284-1] c 52 N74-12778

**CARDIOVASCULAR SYSTEM**

- G conditioning suit Patent  
[NASA-CASE-XMS-02399] c 05 N71-20268  
Method and apparatus for continuously monitoring blood oxygenation, blood pressure, pulse rate and the pressure pulse curve utilizing an ear oximeter as transducer  
[NASA-CASE-XAC-05422] c 04 N71-23185  
Catheter tip force transducer for cardiovascular research  
[NASA-CASE-NPO-13643-1] c 52 N76-29896  
Medical clip  
[NASA-CASE-LAR-12650-1] c 52 N84-28388

**CARGO**

- Portable pallet weighing apparatus  
[NASA-CASE-GSC-12789-1] c 35 N85-20294

**CARRIER FREQUENCIES**

- Bi-carrier demodulator with modulation Patent  
[NASA-CASE-XMF-01160] c 07 N71-11298  
Automatic carrier acquisition system  
[NASA-CASE-NPO-11628-1] c 07 N73-30113  
Demodulator for carrier transducers  
[NASA-CASE-NUC-10107-1] c 33 N74-17930  
Decision feedback loop for tracking a polyphase modulated carrier  
[NASA-CASE-NPO-13103-1] c 32 N74-20811  
Discriminator aided phase lock acquisition for suppressed carrier signals  
[NASA-CASE-NPO-14311-1] c 33 N82-29539

**CARRIER LIFETIME**

- Method of increasing minority carrier lifetime in silicon web or the like  
[NASA-CASE-NPO-15530-1] c 76 N83-35888  
Method and apparatus for measuring minority carrier lifetime in a direct band-gap semiconductor  
[NASA-CASE-NPO-16337-1-CU] c 33 N87-22894

**CARRIER WAVES**

- Variable frequency oscillator with temperature compensation Patent  
[NASA-CASE-XNP-03916] c 09 N71-28810  
Modulator for tone and binary signals --- phase of modulation of tone and binary signals on carrier waves in communication systems  
[NASA-CASE-GSC-11743-1] c 32 N75-24981

**CARRIERS**

- Storage container for electronic devices Patent  
[NASA-CASE-MFS-20075] c 09 N71-26133  
Apparatus for conducting flow electrophoresis in the substantial absence of gravity  
[NASA-CASE-MFS-21394-1] c 34 N74-27744

**CARTESIAN COORDINATES**

- Random function tracer Patent  
[NASA-CASE-XLA-01401] c 15 N71-21179

**CARTRIDGES**

- Endless tape cartridge Patent  
[NASA-CASE-XGS-00769] c 14 N70-41647  
Endless tape transport mechanism Patent  
[NASA-CASE-XGS-01223] c 07 N71-10609  
Catalyst cartridge for carbon dioxide reduction unit  
[NASA-CASE-LAR-10551-1] c 25 N74-12813

**CASCADE CONTROL**

- Reversible ring counter employing cascaded single SCR stages Patent  
[NASA-CASE-XGS-01473] c 09 N71-10673  
Synchronous dc direct drive system Patent  
[NASA-CASE-GSC-10065-1] c 10 N71-27136  
Multiloop RC active filter apparatus having low parameter sensitivity with low amplifier gain  
[NASA-CASE-ARC-10192] c 09 N72-21245

**CASCADE FLOW**

- Cascade plug nozzle --- for jet noise reduction  
[NASA-CASE-LAR-11674-1] c 07 N76-18117

Thrust reverser for a long duct fan engine — for turbofan engines  
[NASA-CASE-LEW-13199-1] c 07 N82-26293

Degassifying and mixing apparatus for liquids — potable water for spacecraft  
[NASA-CASE-MSC-18938-1] c 35 N83-29652

**CASE BONDED PROPELLANTS**

Solid propellant motor  
[NASA-CASE-NPO-11458A] c 20 N78-32179

**CASES (CONTAINERS)**

Non-magnetic battery case Patent  
[NASA-CASE-XGS-00886] c 03 N71-11053

Protected isotope heat source — for atmospheric reentry protection and heat transmission to spacecraft  
[NASA-CASE-LEW-11227-1] c 73 N75-30876

Portable heatable container  
[NASA-CASE-NPO-14237-1] c 44 N80-20808

Low temperature storage container for transporting perishables to space station  
[NASA-CASE-MFS-28248-1] c 31 N88-24817

**CASSEGRAIN ANTENNAS**

Cassegrain antenna subreflector flange for suppressing ground noise Patent  
[NASA-CASE-XNP-00683] c 09 N70-35425

Multi-feed cone Cassegrain antenna Patent  
[NASA-CASE-NPO-10539] c 07 N71-11285

Millimeter wave radiometer for radio astronomy Patent  
[NASA-CASE-XNP-09832] c 30 N71-23723

Dual frequency microwave reflex feed  
[NASA-CASE-NPO-13091-1] c 09 N73-12214

Low loss dichroic plate  
[NASA-CASE-NPO-13171-1] c 32 N74-11000

**CASTING**

Hydraulic casting of liquid polymers Patent  
[NASA-CASE-XNP-07659] c 06 N71-22975

Texturing polymer surfaces by transfer casting — cardiovascular prosthesis  
[NASA-CASE-LEW-13120-1] c 27 N82-28440

Castable hot corrosion resistant alloy  
[NASA-CASE-LEW-14134-2] c 26 N89-14303

High density tape casting system  
[NASA-CASE-NPO-16901-1-CU] c 31 N90-19425

Pressure rig for repetitive casting  
[NASA-CASE-LAR-14050-1] c 31 N90-21216

A tough performance simultaneous semi-interpenetrating polymer network  
[NASA-CASE-LAR-14339-1] c 27 N90-26955

**CASTINGS**

Method of making an apertured casting — using duplicate mold  
[NASA-CASE-LEW-11169-1] c 37 N76-23570

**CATALYSIS**

Decomposition unit Patent  
[NASA-CASE-XMS-00583] c 28 N70-38504

Apparatus for photon excited catalysis  
[NASA-CASE-NPO-13566-1] c 25 N77-32255

Start up system for hydrogen generator used with an internal combustion engine  
[NASA-CASE-NPO-13849-1] c 28 N80-10374

**CATALYSTS**

Catalyst for growth of boron carbide single crystal whiskers  
[NASA-CASE-XHQ-03903] c 15 N69-21922

Catalyst bed removing tool Patent  
[NASA-CASE-XFR-00811] c 15 N70-36901

Ignition means for monopropellant Patent  
[NASA-CASE-XNP-00876] c 28 N70-41311

Hydrogen leak detection device Patent  
[NASA-CASE-MFS-11537] c 14 N71-20442

Catalyst cartridge for carbon dioxide reduction unit  
[NASA-CASE-LAR-10551-1] c 25 N74-12813

Catalysts for polyimide foams from aromatic isocyanates and aromatic dianhydrides — flame retardant foams  
[NASA-CASE-ARC-11107-1] c 25 N80-16116

Mixed polyvalent-monovalent metal coating for carbon-graphite fibers  
[NASA-CASE-NPO-14987-1] c 24 N83-33950

Photoelectrochemical electrodes  
[NASA-CASE-NPO-15458-1] c 25 N84-12262

Negative electrode catalyst for the iron chromium redox energy storage system  
[NASA-CASE-LEW-14028-1] c 44 N86-19721

Isotope exchange in oxide-containing catalyst  
[NASA-CASE-LAR-13542-2-SB] c 25 N90-20154

Process for making a noble metal on tin oxide catalyst  
[NASA-CASE-LAR-13741-1-SB] c 25 N90-20180

Catalyst for carbon monoxide oxidation  
[NASA-CASE-LAR-14155-1-SB] c 25 N90-23517

**CATALYTIC ACTIVITY**

Diesel engine catalytic combustor system — aircraft engines  
[NASA-CASE-LEW-12995-1] c 37 N84-33808

**CATHETERIZATION**

Transducer circuit and catheter transducer Patent  
[NASA-CASE-ARC-10132-1] c 09 N71-24597

Catheter tip force transducer for cardiovascular research  
[NASA-CASE-NPO-13643-1] c 52 N76-29896

Ion beam sputter-etched ventricular catheter for hydrocephalus shunt  
[NASA-CASE-LEW-13107-1] c 52 N83-21785

Method of making an ion beam sputter-etched ventricular catheter for hydrocephalus shunt  
[NASA-CASE-LEW-13107-2] c 52 N84-23095

**CATHODE RAY TUBES**

Single or joint amplitude distribution analyzer Patent  
[NASA-CASE-XNP-01383] c 09 N71-10659

Display for binary characters Patent  
[NASA-CASE-XGS-04987] c 08 N71-20571

Electron beam tube containing a multiple cathode array employing indexing means for cathode substitution Patent  
[NASA-CASE-NPO-10625] c 09 N71-26182

Color television systems using a single gun color cathode ray tube Patent  
[NASA-CASE-ERC-10098] c 09 N71-28618

High contrast cathode ray tube  
[NASA-CASE-ERC-10468] c 09 N72-20206

Digital video display system using cathode ray tube  
[NASA-CASE-NPO-11342] c 09 N72-25248

CRT blanking and brightness control circuit  
[NASA-CASE-KSC-10647-1] c 10 N72-31273

Display system  
[NASA-CASE-ERC-10350] c 14 N73-20474

Very high intensity light source using a cathode ray tube — electron beams  
[NASA-CASE-XNP-01296] c 33 N75-27250

**CATHODES**

Ion thruster cathode Patent Application  
[NASA-CASE-LEW-10814-1] c 28 N70-35422

Electronic cathode having a brush-like structure and a relatively thick oxide emissive coating Patent  
[NASA-CASE-XLE-04501] c 09 N71-23190

Heat activated cell with alkali anode and alkali salt electrolyte Patent  
[NASA-CASE-LEW-11358] c 03 N71-26084

Ion thruster with a combination keeper electrode and electron baffle  
[NASA-CASE-NPO-11880] c 28 N73-24783

Storage battery comprising negative plates of a wedge shaped configuration — for preventing shape change induced malfunctions  
[NASA-CASE-NPO-11806-1] c 44 N74-19693

Method and apparatus for rebalancing a REDOX flow cell system  
[NASA-CASE-LEW-14127-1] c 33 N86-20680

Apparatus for mounting a field emission cathode  
[NASA-CASE-LEW-14108-1] c 33 N87-28832

Plasma gun with coaxial powder feed and adjustable cathode  
[NASA-CASE-LEW-14901-1] c 75 N90-10718

Organic cathode for a secondary battery  
[NASA-CASE-NPO-17604-1-CU] c 33 N90-16124

Copper chloride cathode for a secondary battery  
[NASA-CASE-NPO-17640-1-CU] c 33 N90-17011

Dual cathode system for electron beam instruments  
[NASA-CASE-NPO-16878-1-CU] c 35 N90-20351

Metal chloride cathode for a battery  
[NASA-CASE-NPO-17809-1-CU] c 33 N90-27041

**CATIONS**

Ionene membrane separator  
[NASA-CASE-NPO-11091] c 18 N72-22567

Viscoelastic cationic polymers containing the urethane linkage  
[NASA-CASE-NPO-10830-1] c 27 N81-15104

Procedure to prepare transparent silica gels  
[NASA-CASE-LAR-13476-1-CU] c 76 N87-29360

**CAVITATION FLOW**

Semitoroidal diaphragm cavitating valve Patent  
[NASA-CASE-XNP-09704] c 12 N71-18615

**CAVITIES**

Black body cavity radiometer Patent  
[NASA-CASE-NPO-10810] c 14 N71-27323

Method of coating through-holes Patent  
[NASA-CASE-XMF-05999] c 15 N71-29032

Burrowing apparatus  
[NASA-CASE-XNP-07169] c 15 N73-32362

Method of constructing dished ion thruster grids to provide hole array spacing compensation  
[NASA-CASE-LEW-11878-1] c 20 N76-21276

Method of making hollow elastomeric bodies  
[NASA-CASE-NPO-13535-1] c 37 N76-31524

Method and apparatus for producing concentric hollow spheres — inertial confinement fusion targets  
[NASA-CASE-NPO-14596-1] c 31 N81-33319

Cavity-backed, micro-strip dipole antenna array  
[NASA-CASE-MSC-18606-1] c 32 N82-11336

High performance channel injection sealant invention abstract  
[NASA-CASE-ARC-14408-1] c 27 N82-33523

Maser cavity servo-tuning system  
[NASA-CASE-NPO-15890-1-CU] c 33 N85-29143

Passive venting technique for shallow cavities  
[NASA-CASE-LAR-13875-1] c 05 N89-14233

Passive venting technique for shallow cavities  
[NASA-CASE-LAR-14031-1] c 05 N90-20079

Pressure rig for repetitive casting  
[NASA-CASE-LAR-14050-1] c 31 N90-21216

Circumferential pressure probe  
[NASA-CASE-LAR-13775-1] c 35 N90-23706

**CAVITY RESONATORS**

Helical coaxial resonator RF filter  
[NASA-CASE-XGS-02816] c 07 N69-24323

System for improving signal-to-noise ratio of a communication signal Patent Application  
[NASA-CASE-MSC-12259-1] c 07 N70-12616

Temperature-compensating means for cavity resonator of amplifier Patent  
[NASA-CASE-XNP-00449] c 14 N70-35220

Holder for crystal resonators Patent  
[NASA-CASE-XNP-03637] c 15 N71-21311

System for improving signal-to-noise ratio of a communication signal  
[NASA-CASE-MSC-12259-2] c 07 N72-33146

Infrared tunable laser  
[NASA-CASE-ARC-10463-1] c 09 N73-32111

Tunable cavity resonator with ramp shaped supports  
[NASA-CASE-HQN-10790-1] c 36 N74-11313

Laser apparatus  
[NASA-CASE-GSC-12237-1] c 36 N80-14384

Laser Resonator  
[NASA-CASE-GSC-12565-1] c 36 N84-14509

Off-axis coherently pumped laser  
[NASA-CASE-GSC-12592-1] c 36 N84-28065

Maser cavity servo-tuning system  
[NASA-CASE-NPO-15890-1-CU] c 33 N85-29143

**CELESTIAL BODIES**

Device for determining relative angular position between a spacecraft and a radiation emitting celestial body  
[NASA-CASE-GSC-11444-1] c 14 N73-28490

Position determination systems — using orbital antenna scan of celestial bodies  
[NASA-CASE-MSC-12593-1] c 17 N76-21250

**CELESTIAL NAVIGATION**

Radiant energy intensity measurement system Patent  
[NASA-CASE-XNP-06510] c 14 N71-23797

**CELL ANODES**

Heat activated cell Patent  
[NASA-CASE-LEW-11359] c 03 N71-28579

Method of making emf cell  
[NASA-CASE-LEW-11359-2] c 03 N72-20034

Electrically rechargeable REDOX flow cell  
[NASA-CASE-LEW-12220-1] c 44 N77-14581

**CELL DIVISION**

Process for control of cell division  
[NASA-CASE-LAR-10773-3] c 51 N77-25769

**CELLS**

Mixture separation cell Patent  
[NASA-CASE-XMS-02952] c 18 N71-20742

**CELLS (BIOLOGY)**

System for and method of freezing biological tissue  
[NASA-CASE-GSC-12173-1] c 51 N79-10694

Method for separating biological cells — suspended in aqueous polymer systems  
[NASA-CASE-MFS-23883-1] c 51 N80-16715

Electrophoresis device  
[NASA-CASE-MFS-25426-1] c 25 N83-10126

Horizontally rotated cell culture system  
[NASA-CASE-MSC-21294-1] c 51 N89-13131

Bio-reactor cell culture process  
[NASA-CASE-MSC-21293-1] c 51 N89-14666

Spiral vane bioreactor  
[NASA-CASE-MSC-21361-1] c 51 N89-25557

Controlled method of reducing electrophoretic mobility of various substances  
[NASA-CASE-MFS-26049-1-NP] c 25 N89-28603

Three-dimensional coculture process  
[NASA-CASE-MSC-21560-1] c 51 N90-18852

**CELLULOSE**

Process of treating cellulosic membrane and alkaline with membrane separator  
[NASA-CASE-GSC-10019-1] c 44 N82-24641

Separator for alkaline electric cells and method of making  
[NASA-CASE-GSC-10017-1] c 44 N82-24643

Alkaline electrochemical cells and method of making  
[NASA-CASE-GSC-10349-1] c 44 N82-24645

Aqueous alkali metal hydroxide insoluble cellulose ether membrane  
[NASA-CASE-XGS-05584-1] c 25 N82-29370

**CELLULOSE NITRATE**

Oxidation resistant slurry coating for carbon-based materials  
[NASA-CASE-LEW-13923-1] c 26 N85-35267



## CENTERBODIES

Multi-body aircraft with an all-movable center fuselage actively controlling fuselage pressure drag  
[NASA-CASE-LAR-13511-1] c 05 N88-23765

## CENTRAL PROCESSING UNITS

Pipelined digital SAR azimuth correlator using hybrid FFT-transversal filter  
[NASA-CASE-NPO-15519-1] c 32 N84-34651

## CENTRIFUGAL COMPRESSORS

Centrifugal-reciprocating compressor  
[NASA-CASE-NPO-14597-2] c 37 N84-28081

## CENTRIFUGAL FORCE

Counter pumping debris excluder and separator — gas turbine shaft seals  
[NASA-CASE-LEW-11855-1] c 07 N78-25090  
Vortex motion phase separator for zero gravity liquid transfer  
[NASA-CASE-KSC-11387-1] c 29 N90-20236  
Rotating-unbalanced-mass devices and methods for scanning balloon-borne-experiments, free-flying spacecraft, and space shuttle/space station attached experiments  
[NASA-CASE-MFS-28425-1] c 35 N90-26304

## CENTRIFUGES

Centrifuge mounted motion simulator Patent  
[NASA-CASE-XAC-00399] c 11 N70-34815  
Separator Patent  
[NASA-CASE-XLA-00415] c 15 N71-16079  
Centrifugal lyophobic separator  
[NASA-CASE-LAR-10194-1] c 34 N74-30608  
Fluid control apparatus and method  
[NASA-CASE-LAR-11110-1] c 34 N75-26282  
Biocentrifuge system capable of exchanging specimen cages while in operational mode  
[NASA-CASE-MFS-23825-1] c 51 N81-32829

## CERAMIC BONDING

Method of making a diffusion bonded refractory coating Patent  
[NASA-CASE-XLE-01604-2] c 15 N71-15610  
Method of forming ceramic to metal seal Patent  
[NASA-CASE-XNP-01263-2] c 15 N71-26312  
Composite piston  
[NASA-CASE-LAR-13435-1] c 37 N88-23981

## CERAMIC COATINGS

Evaporant holder  
[NASA-CASE-XLA-03105] c 15 N69-27483  
Unfired-ceramic flame-resistant insulation and method of making the same Patent  
[NASA-CASE-XMF-01030] c 18 N70-41583  
Ceramic insulation for radiant heating environments and method of preparing the same Patent  
[NASA-CASE-MFS-14253] c 33 N71-24858  
Method of making a cermet Patent  
[NASA-CASE-LEW-10219-1] c 18 N71-28729  
Two-component ceramic coating for silica insulation  
[NASA-CASE-MSC-14270-1] c 27 N76-22377  
Three-component ceramic coating for silica insulation  
[NASA-CASE-MSC-14270-2] c 27 N76-23426  
Spray coating apparatus having a rotatable workpiece holder  
[NASA-CASE-ARC-11110-1] c 37 N82-24492  
Laser surface fusion of plasma sprayed ceramic turbine seals  
[NASA-CASE-LEW-13269-1] c 18 N83-20996  
Thermal barrier coating system having improved adhesion  
[NASA-CASE-LEW-1335901] c 27 N83-31855  
Thermal barrier coating system  
[NASA-CASE-LEW-13324-2] c 24 N85-21266  
Ceramic-ceramic shell tile thermal protection system and method thereof  
[NASA-CASE-ARC-11641-1] c 24 N88-18628

## CERAMIC HONEYCOMBS

Ceramic honeycomb structures and the method thereof  
[NASA-CASE-ARC-11652-1] c 27 N87-23737

## CERAMIC MATRIX COMPOSITES

Method of preparing fiber reinforced ceramic material  
[NASA-CASE-LEW-14392-1] c 27 N87-28656  
Fiber reinforced ceramic material  
[NASA-CASE-LEW-14392-2] c 27 N89-29538

## CERAMIC NUCLEAR FUELS

Method of making a cermet Patent  
[NASA-CASE-LEW-10219-1] c 18 N71-28729

## CERAMICS

Transpiration cooled turbine blade manufactured from wires Patent  
[NASA-CASE-XLE-00020] c 15 N70-33226  
Foamed in place ceramic refractory insulating material Patent  
[NASA-CASE-XGS-02435] c 18 N71-22998  
Method for fiberizing ceramic materials Patent  
[NASA-CASE-XNP-00597] c 18 N71-23088  
Method of coating through-holes Patent  
[NASA-CASE-XMF-05999] c 15 N71-29032

## Extrusion can

[NASA-CASE-NPO-10812] c 15 N73-13464

Thermal shock resistant hafnia ceramic material  
[NASA-CASE-LAR-10894-1] c 18 N73-14584

Thermal shock and erosion resistant tantalum carbide ceramic material  
[NASA-CASE-LAR-11902-1] c 27 N78-17206

High temperature resistant cermet and ceramic compositions — for thermal resistant insulators and refractory coatings  
[NASA-CASE-NPO-13690-1] c 27 N78-19302

Thermal insulation attaching means — adhesive bonding of felt vibration insulators under ceramic tiles  
[NASA-CASE-MSC-12619-2] c 27 N79-12221

High temperature resistant cermet and ceramic compositions  
[NASA-CASE-NPO-13690-2] c 27 N79-14213

Sandblasting nozzle  
[NASA-CASE-NPO-13823-1] c 37 N81-25371

Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-13268-2] c 37 N82-26674

Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-13268-1] c 27 N82-29453

Absorbable-susceptor joining of ceramic surfaces  
[NASA-CASE-NPO-15640-1] c 27 N84-22748

Method of fabricating an abradable gas path seal  
[NASA-CASE-LEW-13269-2] c 37 N84-22957

Shell tile thermal protection system  
[NASA-CASE-LAR-12862-1] c 27 N84-27886

Boron-containing organosilane polymers and ceramic materials thereof  
[NASA-CASE-ARC-11649-1-SB] c 27 N88-29040

Fiber reinforced ceramic material  
[NASA-CASE-LEW-14392-2] c 27 N89-29538

Plasma gun with coaxial powder feed and adjustable cathode  
[NASA-CASE-LEW-14901-1] c 75 N90-10718

Boron-containing organosilane polymers and ceramic materials thereof  
[NASA-CASE-ARC-11649-2-SB] c 27 N90-21177

Pressure rig for repetitive casting  
[NASA-CASE-LAR-14050-1] c 31 N90-21216

Ceramic heat pipe wick  
[NASA-CASE-GSC-13199-1] c 27 N90-23541

Lightweight ceramic insulation and method  
[NASA-CASE-MSC-20782-1] c 27 N90-23566

## CEREBROSPINAL FLUID

Ion beam sputter-etched ventricular catheter for hydrocephalus shunt  
[NASA-CASE-LEW-13107-1] c 52 N83-21785

Method of making an ion beam sputter-etched ventricular catheter for hydrocephalus shunt  
[NASA-CASE-LEW-13107-2] c 52 N84-23095

## CERMETS

Process of casting heavy slips Patent  
[NASA-CASE-XLE-00106] c 15 N71-16076

Method of making a cermet Patent  
[NASA-CASE-LEW-10219-1] c 18 N71-28729

Cermet composition and method of fabrication — heat resistant alloys and powders  
[NASA-CASE-NPO-13120-1] c 27 N76-15311

High temperature oxidation resistant cermet compositions  
[NASA-CASE-NPO-13666-1] c 27 N77-13217

High temperature resistant cermet and ceramic compositions — for thermal resistant insulators and refractory coatings  
[NASA-CASE-NPO-13690-1] c 27 N78-19302

High temperature resistant cermet and ceramic compositions  
[NASA-CASE-NPO-13690-2] c 27 N79-14213

Coating with overlay metallic-cermet alloy systems  
[NASA-CASE-LEW-13639-2] c 26 N84-27855

Overlay metallic-cermet alloy coating systems  
[NASA-CASE-LEW-13639-1] c 26 N84-33555

## CESIUM

Method for removing oxygen impurities from cesium Patent  
[NASA-CASE-XNP-04262-2] c 17 N71-26773

Method of producing I-123 — by bombardment of cesium causing spallation  
[NASA-CASE-LEW-11390-2] c 25 N76-27383

## CESIUM DIODES

Thermionic tantalum emitter doped with oxygen Patent Application  
[NASA-CASE-NPO-11138] c 03 N70-34646

Cavity emitter for thermionic converter Patent  
[NASA-CASE-NPO-10412] c 09 N71-28421

Thermionic energy converters  
[NASA-CASE-LEW-12443-1] c 44 N83-32175

## CESIUM ENGINES

Variable thrust ion engine utilizing thermally decomposable solid fuel Patent  
[NASA-CASE-XMF-00923] c 28 N70-36802

Method of producing porous tungsten ionizers for ion rocket engines Patent  
[NASA-CASE-XLE-00455] c 28 N70-38197

## CESIUM VAPOR

Electric power generation system directory from laser power  
[NASA-CASE-NPO-13308-1] c 36 N75-30524

## CHALCOGENIDES

Photoelectrochemical cells including chalcogenophosphate photoelectrodes  
[NASA-CASE-LAR-12958-1] c 44 N84-23019

## CHAMBERS

Diffuser/ejector system for a very high vacuum environment  
[NASA-CASE-MFS-25791-1] c 09 N84-27749

## CHANGE DETECTION

Real-time image difference detection using a polarization rotation spacial light modulator  
[NASA-CASE-NPO-17144-1-CU] c 74 N88-25305

## CHANNEL FLOW

Method of making a regeneratively cooled combustion chamber Patent  
[NASA-CASE-XLE-00150] c 28 N70-41818

Heated element fluid flow sensor Patent  
[NASA-CASE-MSC-12084-1] c 12 N71-17569

Multicolor printing plate joining  
[NASA-CASE-LEW-13598-1] c 35 N84-22930

## CHANNELS (DATA TRANSMISSION)

Automatic fault correction system for parallel signal channels Patent  
[NASA-CASE-XNP-03263] c 09 N71-18843

Helical recorder arrangement for multiple channel recording on both sides of the tape  
[NASA-CASE-GSC-10614-1] c 09 N72-11224

Asynchronous, multiplexing, single line transmission and recovery data system — for satellite use  
[NASA-CASE-NPO-13321-1] c 32 N75-26195

High-speed data link for moderate distances and noisy environments  
[NASA-CASE-NPO-14152-1] c 32 N80-18252

## CHARACTER RECOGNITION

Automatic character skew and spacing checking network — of digital tape drive systems  
[NASA-CASE-GSC-11925-1] c 33 N76-18353

System and method for character recognition  
[NASA-CASE-NPO-11337-1] c 74 N81-19896

## CHARACTERIZATION

Apparatus and method for characterizing the transmission efficiency of a mass spectrometer  
[NASA-CASE-NPO-16989-1-CU] c 35 N89-28794

Universal nondestructive MM-wave integrated circuit test fixture  
[NASA-CASE-LEW-14746-1] c 33 N90-17009

## CHARGE COUPLED DEVICES

Multispectral imaging and analysis system — using charge coupled devices and linear arrays  
[NASA-CASE-NPO-13691-1] c 43 N79-17288

CCD correlated quadruple sampling processor  
[NASA-CASE-NPO-14426-1] c 33 N81-27396

Programmable scan/read circuitry for charge coupled device imaging detectors — spacecraft attitude control and star trackers  
[NASA-CASE-NPO-15345-1] c 74 N84-23247

Laser pulse detection method and apparatus  
[NASA-CASE-NPO-16030-1] c 36 N84-25037

## CHARGE DISTRIBUTION

Method of erasing target material of a vidicon tube or the like Patent  
[NASA-CASE-NXP-06028] c 09 N71-23189

Charge storage diode modulators and demodulators  
[NASA-CASE-NPO-10189-1] c 33 N77-21314

## CHARGE EFFICIENCY

State-of-charge coulometer  
[NASA-CASE-NPO-15759-1] c 35 N85-21596

Method for determining the point of zero zeta potential of semiconductor  
[NASA-CASE-LAR-12893-1] c 76 N85-30923

## CHARGE EXCHANGE

Ion beam thruster shield  
[NASA-CASE-LEW-12082-1] c 20 N77-10148

## CHARGE TRANSFER

Magnetic counter Patent  
[NASA-CASE-XNP-08836] c 09 N71-12515

Pressure transducer — using a monomeric charge transfer complex sensor  
[NASA-CASE-NPO-11150] c 35 N78-17359

Process for preparing highly optically transparent/colorless aromatic polyimide film  
[NASA-CASE-LAR-13351-1] c 27 N86-31727

## CHARGE TRANSFER DEVICES

Charge transfer reaction laser with preionization means  
[NASA-CASE-NPO-13945-1] c 36 N78-27402

Time delay and integration detectors using charge transfer devices  
[NASA-CASE-GSC-12324-1] c 33 N81-33403

Image readout device with electronically variable spatial resolution  
[NASA-CASE-LAR-12633-1] c 33 N82-24416

**CHARGED PARTICLES**  
Method of forming thin window drifted silicon charged particle detector Patent  
[NASA-CASE-XLE-00808] c 24 N71-10560  
Electrostatic charged particle analyzer having deflection members shaped according to the periodic voltage applied thereto Patent  
[NASA-CASE-XAC-05506-1] c 24 N71-16095  
Electrostatic collector for charged particles  
[NASA-CASE-LEW-11192-1] c 09 N73-13208  
Method and apparatus for neutralizing potentials induced on spacecraft surfaces  
[NASA-CASE-GSC-11963-1] c 33 N77-10429  
Apparatus for measuring charged particle beam  
[NASA-CASE-MFS-25641-1] c 72 N84-28575  
Multistage spent particle collector and a method for making same  
[NASA-CASE-LEW-13914-1] c 37 N85-33489

**CHARGING**  
Synchronous orbit battery cyclor  
[NASA-CASE-GSC-11211-1] c 03 N72-25020

**CHARRING**  
Ablation sensor  
[NASA-CASE-XLA-01781] c 14 N69-39975  
Ablation sensor Patent  
[NASA-CASE-XLA-01794] c 33 N71-21588

**CHASSIS**  
Chassis unit insert tightening-extract device  
[NASA-CASE-XMS-01077-1] c 37 N79-33467  
Articulated suspension system  
[NASA-CASE-NPO-17354-1-CU] c 37 N90-17153

**CHECKOUT**  
Electronic checkout system for space vehicles Patent  
[NASA-CASE-KKS-08012-2] c 31 N71-15566  
Rapid activation and checkout device for batteries  
[NASA-CASE-MFS-22749-1] c 44 N76-14601  
Decommutator patchboard verifier  
[NASA-CASE-KSC-11065-1] c 33 N81-26359

**CHELATES**  
Ammonium perchlorate composite propellant containing an organic transitional metal chelate catalytic additive Patent  
[NASA-CASE-LAR-10173-1] c 27 N71-14090  
Chelate-modified polymers for atmospheric gas chromatography  
[NASA-CASE-LAR-11154-1] c 25 N80-23383

**CHEMICAL ANALYSIS**  
Analytical test apparatus and method for determining oxide content of alkali metal Patent  
[NASA-CASE-XLE-01997] c 06 N71-23527  
Automated fluid chemical analyzer Patent  
[NASA-CASE-XNP-09451] c 06 N71-26754  
Method for determining presence of OH in magnesium oxide  
[NASA-CASE-NPO-10774] c 06 N72-17095  
Micrometeoroid analyzer  
[NASA-CASE-ARC-10443-1] c 14 N73-20477  
Chromato-fluorographic drug detector — device for detecting and recording fluorescent properties of materials  
[NASA-CASE-ARC-10633-1] c 25 N74-26947  
Amino acid analysis  
[NASA-CASE-NPO-12130-1] c 25 N75-14844  
Gas chromatograph injection system  
[NASA-CASE-ARC-10344-2] c 35 N75-26334  
Alkaline electrochemical cells and method of making  
[NASA-CASE-GSC-10349-1] c 44 N82-24645  
Particle analyzing method and apparatus  
[NASA-CASE-NPO-15292-1] c 35 N83-27184  
System for monitoring physical characteristics of fluids  
[NASA-CASE-NPO-15400-1] c 34 N83-31893  
Method and apparatus for mapping the distribution of chemical elements in an extended medium  
[NASA-CASE-GSC-12808-1] c 25 N85-21279

**CHEMICAL AUXILIARY POWER UNITS**  
Ion-exchange membrane with platinum electrode assembly Patent  
[NASA-CASE-XMS-02063] c 03 N71-29044

**CHEMICAL BONDS**  
Fluorine-containing polyformals  
[NASA-CASE-XMF-06900-1] c 27 N79-21191  
Perfluoroalkyl polytriazines containing pendent iododifluoromethyl groups  
[NASA-CASE-ARC-11241-1] c 25 N81-14016  
Preparation of perfluorinated 1,2,4-oxadiazoles  
[NASA-CASE-ARC-11267-2] c 23 N82-28353  
The 1-((diorganoxyphosphonyl)-methyl)-2,4- and -2,6-diamido benzenes  
[NASA-CASE-ARC-11425-4] c 23 N90-20133  
Boron-containing organosilane polymers and ceramic materials thereof  
[NASA-CASE-ARC-11649-2-SB] c 27 N90-21177

**CHEMICAL COMPOSITION**

Phototropic composition of matter  
[NASA-CASE-XGS-03736] c 14 N72-22443  
Nitramine propellants — gun propellant burning rate  
[NASA-CASE-NPO-14103-1] c 28 N78-31255  
Composition and method for making polyimide resin-reinforced fabric  
[NASA-CASE-LEW-12933-1] c 27 N81-18296  
Non-toxic invert analog glass compositions of high modulus  
[NASA-CASE-HQN-10328-2] c 27 N82-29454  
High modulus rare earth and beryllium containing silicate glass compositions — for glass reinforcing fibers  
[NASA-CASE-HQN-10595-1] c 27 N82-29455  
Low temperature cross linking polyimides  
[NASA-CASE-LEW-12876-2] c 27 N83-29392  
Acetylene (ethynyl) terminated polyimide siloxane and process for preparation thereof  
[NASA-CASE-LAR-13318-1] c 27 N87-14516  
Novel polyimide compositions based on 4,4'-isophthaloyldiphthalic anhydride (IDPA)  
[NASA-CASE-LAR-14194-1] c 24 N90-15148  
Polyimidoazoles via aromatic nucleophilic displacement  
[NASA-CASE-LAR-14145-1] c 27 N90-26954

**CHEMICAL COMPOUNDS**

Ultraviolet atomic emission detector  
[NASA-CASE-HQN-10756-1] c 14 N72-25428

**CHEMICAL ELEMENTS**

Apparatus for remote handling of materials — mixing or analyzing dangerous chemicals  
[NASA-CASE-LAR-10634-1] c 37 N74-18123

**CHEMICAL ENGINEERING**

Process for the preparation of calcium superoxide  
[NASA-CASE-ARC-11053-1] c 25 N79-10162

**CHEMICAL EXPLOSIONS**

Hypervelocity gun — using both electric and chemical energy for projectile propulsion  
[NASA-CASE-XLE-03186-1] c 09 N79-21084

**CHEMICAL INDICATORS**

Self-contained, single-use hose and tubing cleaning module  
[NASA-CASE-MSC-20857-1] c 37 N87-17035

**CHEMICAL MACHINING**

Masking device Patent  
[NASA-CASE-XNP-02092] c 15 N70-42033

**CHEMICAL PROPERTIES**

Method of producing alternating ether siloxane copolymers Patent  
[NASA-CASE-XMF-02584] c 06 N71-20905  
Polyurethanes of fluorine containing polycarbonates  
[NASA-CASE-MFS-10512] c 06 N71-30099  
Highly fluorinated polyurethanes  
[NASA-CASE-NPO-10767-1] c 06 N73-33076  
Thiophenyl ether disiloxanes and trisiloxanes useful as lubricant fluids  
[NASA-CASE-MFS-22411-1] c 37 N74-21058

**CHEMICAL REACTIONS**

Process for interfacial polymerization of pyromellitic dianhydride and 1,2,4, 5-tetraamino-benzene Patent  
[NASA-CASE-XLA-03104] c 06 N71-11235  
Synthesis of polymeric schiff bases by schiff-base exchange reactions Patent  
[NASA-CASE-XMF-08651] c 06 N71-11236  
Preparation of ordered poly /arylenesiloxane/ polymers  
[NASA-CASE-XMF-10753] c 06 N71-11237  
Imidazopyrrolone/imide copolymers Patent  
[NASA-CASE-XLA-08802] c 06 N71-11238  
High resolution developing of photosensitive resists Patent  
[NASA-CASE-XGS-04993] c 14 N71-17574  
Inorganic solid film lubricants Patent  
[NASA-CASE-XMF-03988] c 15 N71-21403  
Process for preparation of dianilinosilanes Patent  
[NASA-CASE-XMF-06409] c 06 N71-23230  
Aromatic diamine-aromatic dialdehyde high molecular weight Schiff base polymers prepared in a monofunctional Schiff base Patent  
[NASA-CASE-XMF-03074] c 06 N71-24740  
Hydroxy terminated perfluoro ethers Patent  
[NASA-CASE-NPO-10768] c 06 N71-27254  
Metal containing polymers from cyclic tetrameric phenylphosphonitrimides Patent  
[NASA-CASE-HQN-10364] c 06 N71-27363  
Gas liquefaction and dispensing apparatus Patent  
[NASA-CASE-NPO-10070] c 15 N71-27372  
Epoxy-aziridine polymer product Patent  
[NASA-CASE-NPO-10701] c 06 N71-28620  
Process for preparation of high-molecular- weight polyaryloxysilanes Patent  
[NASA-CASE-XMF-08674] c 06 N71-28807  
Trialkyl-dihalotantalum and niobium compounds Patent  
[NASA-CASE-XNP-04023] c 06 N71-28808  
Method of making foamed materials in zero gravity  
[NASA-CASE-XMF-09902] c 15 N72-11387

Preparation of high purity copper fluoride  
[NASA-CASE-LEW-10794-1] c 06 N72-17093  
Firefly pump-metering system  
[NASA-CASE-GSC-10218-1] c 15 N72-21465  
Apparatus for producing metal powders  
[NASA-CASE-XLE-06461-2] c 17 N72-28535  
Nondestructive spot test method for titanium and titanium alloys  
[NASA-CASE-LAR-10539-1] c 17 N73-12547  
Self-cycling fluid heater  
[NASA-CASE-MSC-15567-1] c 33 N73-16918  
Method of forming difunctional polyisobutylene  
[NASA-CASE-NPO-10893] c 27 N73-22710  
Polyurethanes from fluoroalkyl propyleneglycol polyethers  
[NASA-CASE-MFS-10506] c 06 N73-30100  
Fluorine containing polyurethane  
[NASA-CASE-MFS-10509] c 06 N73-30103  
Novel polymers and method of preparing same  
[NASA-CASE-NPO-10998-1] c 06 N73-32029  
Polyimide foam for the thermal insulation and fire protection  
[NASA-CASE-ARC-10464-1] c 27 N74-12812  
Intumescent composition, foamed product prepared therewith and process for making same  
[NASA-CASE-ARC-10304-2] c 27 N74-27037  
Vapor phase growth of groups 3-5 compounds by hydrogen chloride transport of the elements  
[NASA-CASE-LAR-11144-1] c 25 N75-26043  
Utilization of oxygen difluoride for syntheses of fluoropolymers  
[NASA-CASE-NPO-12061-1] c 27 N76-16228  
Method for detecting pollutants — through chemical reactions and heat treatment  
[NASA-CASE-LAR-11405-1] c 45 N76-31714  
Process for preparing higher oxides of the alkali and alkaline earth metals  
[NASA-CASE-ARC-10992-1] c 26 N78-32229  
Method for preparing addition type polyimide prepreps  
[NASA-CASE-LAR-12054-2] c 27 N81-14078  
The 1,1,1-triaryl-2,2,2-trifluoroethanes and process for their synthesis  
[NASA-CASE-ARC-11097-1] c 25 N82-24312  
Preparation of perfluorinated 1,2,4-oxadiazoles  
[NASA-CASE-ARC-11267-2] c 23 N82-28353  
Process for producing tris (n-methylamino) methylsilane  
[NASA-CASE-MFS-25721-1] c 25 N85-21280  
Chemical approach for controlling nadimide cure temperature and rate  
[NASA-CASE-LEW-13770-5] c 27 N85-21352  
Fire-resistant phosphorus containing polyimides and copolyimides  
[NASA-CASE-ARC-11522-2] c 27 N85-34280  
Sulfone-ester polymers containing pendent ethynyl groups  
[NASA-CASE-LAR-13316-1] c 27 N86-27450  
Preparation of B-trichloroborazine  
[NASA-CASE-ARC-11643-1-SB] c 23 N87-23698  
The 1-((diorganoxy phosphonyl) methyl)-2,4- and -2,6-diamino benzenes and their derivatives  
[NASA-CASE-ARC-11425-2] c 23 N87-28605  
Method of dispensing reagent chemicals in space  
[NASA-CASE-LAR-13607-1-CU] c 29 N88-29048  
Polyimidoazoles via aromatic nucleophilic displacement  
[NASA-CASE-LAR-14145-1] c 27 N90-26954

**CHEMICAL REACTORS**  
Chemical vapor deposition reactor — providing uniform film thickness  
[NASA-CASE-NPO-13650-1] c 25 N79-28253  
Sodium storage and injection system  
[NASA-CASE-NPO-14384-1] c 37 N80-10494  
Method of producing silicon — gas phase reactor multiple injector liquid feed system  
[NASA-CASE-NPO-14382-1] c 31 N80-18231  
Fluidized bed coal combustion reactor  
[NASA-CASE-NPO-14273-1] c 25 N82-11144  
Solar heated fluidized bed gasification system  
[NASA-CASE-NPO-15071-1] c 44 N82-16475  
Thermal reactor — liquid silicon production from silane gas  
[NASA-CASE-NPO-14369-1] c 44 N83-10501  
Pressure letdown method and device for coal conversion systems  
[NASA-CASE-NPO-15100-1] c 44 N84-14583  
Apparatus and method to keep the walls of a free-space reactor free from deposits of solid materials  
[NASA-CASE-NPO-15851-1] c 37 N85-21652  
Remotely controllable mixing system  
[NASA-CASE-MFS-28153-1] c 31 N86-32589

**CHEMICAL TESTS**  
Nondestructive spot test method for titanium and titanium alloys  
[NASA-CASE-LAR-10539-1] c 17 N73-12547

Nondestructive spot test method for magnesium and magnesium alloys  
[NASA-CASE-LAR-10953-1] c 17 N73-27446

Chemical approach for controlling nadimide cure temperature and rate  
[NASA-CASE-LEW-13770-6] c 25 N85-30039

**CHEMILUMINESCENCE**  
Method and apparatus for eliminating luminol interference material  
[NASA-CASE-MSC-16260-1] c 51 N80-16714

**CHEMISORPTION**  
Oxygen chemisorption cryogenic refrigerator  
[NASA-CASE-NPO-16734-1-CU] c 31 N88-14223

**CHEMOTHERAPY**  
Indomethacin-antihistamine combination for gastric ulceration control  
[NASA-CASE-ARC-11118-2] c 52 N81-14613

**CHIPS (ELECTRONICS)**  
Head for high speed spinner having a vacuum chuck --- holding silicon dioxide chips for etching  
[NASA-CASE-NPO-15227-1] c 37 N81-33482

Liquid immersion apparatus for minute articles  
[NASA-CASE-MFS-25363-1] c 37 N82-12441

Laterally stacked Schottky diodes for infrared sensor applications  
[NASA-CASE-NPO-17426-1-CU] c 33 N90-10329

Miniaturization of flight deflection measurement system  
[NASA-CASE-LAR-13628-1] c 35 N90-23707

VLSI architecture for a Reed-Solomon decoder  
[NASA-CASE-NPO-17897-1-CU] c 33 N90-27040

**CHIPS (MEMORY DEVICES)**  
VLSI single-chip (255,223) Reed-Solomon encoder with interleaver  
[NASA-CASE-NPO-17280-1-CU] c 17 N90-21061

**CHIRP SIGNALS**  
Method for shaping and aiming narrow beams --- sonar mapping and target identification  
[NASA-CASE-NPO-14632-1] c 32 N82-18443

**CHLORIDES**  
The 5-(4-Ethynylphenoxy) isophthalic chloride  
[NASA-CASE-LAR-13316-2] c 27 N87-14515

Metal chloride cathode for a battery  
[NASA-CASE-NPO-17809-1-CU] c 33 N90-27041

**CHLORINATION**  
Specialized halogen generator for purification of water  
Patent  
[NASA-CASE-XLA-08913] c 14 N71-28933

Coal desulfurization by aqueous chlorination  
[NASA-CASE-NPO-14902-1] c 25 N82-29371

Hydrodesulfurization of chlorinated coal  
[NASA-CASE-NPO-15304-1] c 25 N83-31743

**CHLORINE**  
Fluidized bed desulfurization  
[NASA-CASE-NPO-15924-1] c 25 N85-35253

**CHLOROPRENE RESINS**  
Flexible fire retardant polyisocyanate modified neoprene foam --- for thermal protective devices  
[NASA-CASE-ARC-10180-1] c 27 N74-12814

**CHOKES**  
Current dependent filter inductance  
[NASA-CASE-ERC-10139] c 09 N72-17154

**CHOKES (RESTRICTIONS)**  
Variably positioned guide vanes for aerodynamic choking  
[NASA-CASE-LAR-10642-1] c 07 N74-31270

Adjustable choke for fluids nozzle  
[NASA-CASE-NPO-17625-1-CU] c 34 N90-27070

**CHOLESTEROL**  
Reduction of blood serum cholesterol  
[NASA-CASE-NPO-12119-1] c 52 N75-15270

**CHROMATOGRAPHY**  
Chromato-fluorographic drug detector --- device for detecting and recording fluorescent properties of materials  
[NASA-CASE-ARC-10633-1] c 25 N74-26947

Modulated voltage metastable ionization detector  
[NASA-CASE-ARC-11503-1] c 35 N85-34374

**CHROMIUM**  
Selective coating for solar panels --- using black chrome and black nickel  
[NASA-CASE-LEW-12159-1] c 44 N78-19599

Efficiency of silicon solar cells containing chromium  
[NASA-CASE-NPO-15179-1] c 44 N82-26777

Process for improving moisture resistance of epoxy resins by addition of chromium ions  
[NASA-CASE-LAR-13226-1] c 27 N85-34282

Negative electrode catalyst for the iron chromium redox energy storage system  
[NASA-CASE-LEW-14028-1] c 44 N86-19721

**CHROMIUM ALLOYS**  
Method of heat treating age-hardenable alloys  
[NASA-CASE-XNP-01311] c 26 N75-29236

Nical ternary alloy having improved cyclic oxidation resistance  
[NASA-CASE-LEW-13339-1] c 26 N82-31505

**CHROMIUM COMPOUNDS**

Chromium electrodes for REDOX cells  
[NASA-CASE-LEW-13653-1] c 44 N84-28205

**CHROMOSOMES**  
Automated clinical system for chromosome analysis  
[NASA-CASE-NPO-13913-1] c 52 N79-12694

**CINEMATOGRAPHY**  
High speed photo-optical time recording  
[NASA-CASE-KSC-10294] c 14 N72-18411

Holographic motion picture camera with Doppler shift compensation  
[NASA-CASE-MFS-22517-1] c 35 N76-18402

**CIRCUIT BOARDS**  
Electrical feed-through connection for printed circuit boards and printed cable  
[NASA-CASE-XMF-01483] c 14 N69-27431

Printed cable connector Patent  
[NASA-CASE-XMF-00369] c 09 N70-36494

Printed circuit board with bellows rivet connection Patent  
[NASA-CASE-XNP-05082] c 15 N70-41960

Electrical spot terminal assembly Patent  
[NASA-CASE-NPO-10034] c 15 N71-17685

Polyimide resin-fiberglass cloth laminates for printed circuit boards  
[NASA-CASE-MFS-20408] c 18 N73-12604

Circuit board package with wedge shaped covers  
[NASA-CASE-MFS-21919-1] c 10 N73-25243

Tool for use in lifting pin supported objects  
[NASA-CASE-NPO-13157-1] c 37 N74-32918

Shock absorbing mount for electrical components  
[NASA-CASE-NPO-13253-1] c 37 N75-18573

Connector --- for connecting circuits on different layers of multilayer printed circuit boards  
[NASA-CASE-LAR-11709-1] c 37 N76-27567

Traveling wave tube circuit  
[NASA-CASE-LEW-12013-1] c 33 N79-10339

High stability amplifier  
[NASA-CASE-GSC-12646-1] c 33 N83-34191

Beam forming network  
[NASA-CASE-NPO-15743-1] c 32 N85-29118

**CIRCUIT BREAKERS**  
Mercury capillary interrupter Patent  
[NASA-CASE-XNP-02251] c 12 N71-20896

Diode and protection fuse unit Patent  
[NASA-CASE-XKS-03381] c 09 N71-22796

Separation simulator Patent  
[NASA-CASE-XKS-04631] c 10 N71-23663

Detenting servomotor Patent  
[NASA-CASE-XNP-06936] c 15 N71-24695

Circuit breaker utilizing magnetic latching relays Patent  
[NASA-CASE-MSC-11277] c 09 N71-29008

Multiple circuit protector device  
[NASA-CASE-XMS-02744] c 33 N75-27249

Solar concentrator protective system  
[NASA-CASE-NPO-15662-1] c 44 N84-28204

**CIRCUIT DIAGRAMS**  
Excitation and detection circuitry for a flux responsive magnetic head  
[NASA-CASE-XNP-04183] c 09 N69-24329

Signal multiplexer  
[NASA-CASE-XGS-01110] c 07 N69-24334

Ring counter  
[NASA-CASE-XGS-03095] c 09 N69-27463

Solid state switch  
[NASA-CASE-XNP-09228] c 09 N69-27500

Ultra-long monostable multivibrator employing bistable semiconductor switch to allow charging of timing circuit Patent  
[NASA-CASE-XGS-00381] c 09 N70-34819

Frequency shift keyed demodulator Patent  
[NASA-CASE-XGS-02889] c 07 N71-11282

Difference circuit Patent  
[NASA-CASE-XNP-08274] c 10 N71-13537

High voltage transistor circuit Patent  
[NASA-CASE-XNP-06937] c 09 N71-19516

Weld control system using thermocouple wire Patent  
[NASA-CASE-MFS-06074] c 15 N71-20393

Correlation function apparatus Patent  
[NASA-CASE-NPO-00746] c 07 N71-21476

Diode and protection fuse unit Patent  
[NASA-CASE-XKS-03381] c 09 N71-22796

Buck boost voltage regulation circuit Patent  
[NASA-CASE-GSC-10735-1] c 10 N71-26085

Active RC networks  
[NASA-CASE-ARC-10042-2] c 10 N72-11256

Microcircuit negative cutter  
[NASA-CASE-XLA-09843] c 15 N72-27485

Self-regulating proportionally controlled heating apparatus and technique  
[NASA-CASE-GSC-11752-1] c 77 N75-20140

Symmetrical odd-modulus frequency divider  
[NASA-CASE-NPO-13426-1] c 33 N75-31330

Trielectrode capacitive pressure transducer  
[NASA-CASE-ARC-10711-2] c 33 N76-21390

Frequency discriminator and phase detector circuit  
[NASA-CASE-NPO-11515-1] c 33 N77-13315

**CIRCUIT PROTECTION**  
Protection for energy conversion systems  
[NASA-CASE-XGS-04808] c 03 N69-25146

Protective circuit of the spark gap type  
[NASA-CASE-XAC-08981] c 09 N69-39897

Electrical load protection device Patent  
[NASA-CASE-MSC-12135-1] c 09 N71-12526

Apparatus for overcurrent protection of a push-pull amplifier Patent  
[NASA-CASE-MSC-12033-1] c 09 N71-13531

Method of coating circuit paths on printed circuit boards with solder Patent  
[NASA-CASE-XMF-01599] c 09 N71-20705

Power supply circuit Patent  
[NASA-CASE-XMS-00913] c 10 N71-23543

Selective plating of etched circuits without removing previous plating Patent  
[NASA-CASE-XGS-03120] c 15 N71-24047

Failure sensing and protection circuit for converter networks Patent  
[NASA-CASE-GSC-10114-1] c 10 N71-27366

Power responsive overload sensing circuit Patent  
[NASA-CASE-GSC-10667-1] c 10 N71-33129

Saturation current protection apparatus for saturable core transformers  
[NASA-CASE-ERC-10075-2] c 09 N72-22196

Electrical insulating layer process  
[NASA-CASE-LEW-10489-1] c 15 N72-25447

Phase protection system for ac power lines  
[NASA-CASE-MSC-17832-1] c 33 N74-14956

Overvoltage protection network  
[NASA-CASE-ARC-10197-1] c 33 N74-17929

Shock absorbing mount for electrical components  
[NASA-CASE-NPO-13253-1] c 37 N75-18573

Multiple circuit protector device  
[NASA-CASE-XMS-02744] c 33 N75-27249

Multi-cell battery protection system  
[NASA-CASE-LEW-12039-1] c 44 N78-14625

Fused switch  
[NASA-CASE-XMS-01244-1] c 33 N79-33393

Base drive for paralleled inverter systems  
[NASA-CASE-NPO-14163-1] c 33 N81-14220

Shielded conductor cable system  
[NASA-CASE-MSC-12745-1] c 33 N81-27397

Push-pull converter with energy saving circuit for protecting switching transistors from peak power stress  
[NASA-CASE-NPO-14316-1] c 33 N81-33404

Thermal switch disc for short circuit protection of batteries  
[NASA-CASE-MSC-21428-1] c 33 N90-17008

**CIRCUIT RELIABILITY**  
Split-cross-bridge resistor for testing for proper fabrication of integrated circuits  
[NASA-CASE-NPO-16021-1] c 33 N85-30187

Cross-contact chain  
[NASA-CASE-NPO-16784-1] c 33 N87-10231

**CIRCUITS**  
Connector - Electrical  
[NASA-CASE-XLA-01288] c 09 N69-21470

Binary magnetic memory device Patent  
[NASA-CASE-XGS-00174] c 08 N70-34743

Electronic motor control system Patent  
[NASA-CASE-XMF-01129] c 09 N70-38712

Starting circuit for vapor lamps and the like Patent  
[NASA-CASE-XNP-01058] c 09 N71-12540

Drift compensation circuit for analog to digital converter Patent  
[NASA-CASE-XNP-04780] c 08 N71-19687

High voltage divider system Patent  
[NASA-CASE-XLE-02008] c 09 N71-21583

Solar cell and circuit array and process for nullifying magnetic fields Patent  
[NASA-CASE-XGS-03390] c 03 N71-23187

Dual polarity full wave dc motor drive Patent  
[NASA-CASE-XNP-07477] c 09 N71-26092

Temperature regulation circuit Patent  
[NASA-CASE-XNP-02792] c 14 N71-28958

Pulse generating circuit employing switch means on ends of delay line for alternately charging and discharging same Patent  
[NASA-CASE-XNP-00745] c 10 N71-28960

Digital pulse width selection circuit Patent  
[NASA-CASE-XLA-07788] c 09 N71-29139

Power responsive overload sensing circuit Patent  
[NASA-CASE-GSC-10667-1] c 10 N71-33129

Pulsed excitation voltage circuit for transducers  
[NASA-CASE-FRC-10036] c 09 N72-22200

Thermal to electrical power conversion system with solid-state switches with Seebeck effect compensation  
[NASA-CASE-NPO-11388] c 03 N72-23048

Controllable load insensitive power converters  
[NASA-CASE-ERC-10268] c 09 N72-25252

Failsafe multiple transformer circuit configuration  
[NASA-CASE-NPO-11078] c 09 N72-25262

- Microcircuit negative cutter  
[NASA-CASE-XLA-09843] c 15 N72-27485
- Infinite range electronics gain control circuit  
[NASA-CASE-GSC-10786-1] c 10 N72-28241
- Active tuned circuit  
[NASA-CASE-GSC-11340-1] c 10 N72-33230
- Heat detection and compositions and devices therefor  
[NASA-CASE-NPO-10764-1] c 14 N73-14428
- Driving lamps by induction  
[NASA-CASE-MFS-21214-1] c 09 N73-30181
- Circuit for detecting initial systole and diastolic notch — for monitoring arterial pressure  
[NASA-CASE-LEW-11581-1] c 54 N75-13531
- Peak holding circuit for extremely narrow pulses  
[NASA-CASE-MSC-14129-1] c 33 N75-18479
- High voltage distributor  
[NASA-CASE-GSC-11849-1] c 33 N76-16332
- Circuit for automatic load sharing in parallel converter modules  
[NASA-CASE-NPO-14056-1] c 33 N79-24257
- Method and apparatus for fabricating improved solar cell modules  
[NASA-CASE-NPO-14416-1] c 44 N81-14389
- Control system for an induction motor with energy recovery  
[NASA-CASE-MFS-25477-1] c 33 N84-14424
- Ladder supported ring bar circuit  
[NASA-CASE-LEW-13570-1] c 33 N84-16452
- Programmable scan/read circuitry for charge coupled device imaging detectors — spacecraft attitude control and star trackers  
[NASA-CASE-NPO-15345-1] c 74 N84-23247
- Dielectric based submillimeter backward wave oscillator circuit  
[NASA-CASE-LEW-13736-1] c 33 N84-27974
- High voltage power supply  
[NASA-CASE-GSC-12818-1] c 33 N85-29147
- Method and apparatus for transfer function simulator for testing complex systems  
[NASA-CASE-NPO-15696-1] c 33 N85-34333
- Amplifier for measuring low-level signals in the presence of high common mode voltage  
[NASA-CASE-MFS-25868-1] c 33 N86-20670
- Processing circuit with asymmetry corrector and convolutional encoder for digital data  
[NASA-CASE-MSC-20187-1] c 33 N87-25531
- Arcjet power supply and start circuit  
[NASA-CASE-LEW-14374-1] c 09 N88-28939
- Power supply conditioning circuit  
[NASA-CASE-NPO-17233-1-CU] c 33 N88-28995
- Method and circuit for controlling the evolution time interval of a laser output pulse  
[NASA-CASE-LAR-13772-1] c 36 N89-28816
- Method and circuit for shaping laser output pulses  
[NASA-CASE-LAR-14203-1] c 36 N89-28817
- CIRCULAR CONES**  
Optical inspection apparatus Patent  
[NASA-CASE-XMF-00462] c 14 N70-34298
- CIRCULAR CYLINDERS**  
Light intensity modulator controller Patent  
[NASA-CASE-XMS-04300] c 09 N71-19479
- CIRCULAR POLARIZATION**  
Electromagnetic polarization systems and methods Patent  
[NASA-CASE-GSC-10021-1] c 09 N71-24595
- Virtual wall slot circularly polarized planar array antenna  
[NASA-CASE-NPO-10301] c 07 N72-11148
- Circularly polarized antenna  
[NASA-CASE-ERC-10214] c 09 N72-31235
- Stripline feed for a microstrip array of patch elements with teardrop shaped probes  
[NASA-CASE-NPO-17548-1-CU] c 32 N90-16104
- CIRCULAR TUBES**  
Evacuated displacement compression molding  
[NASA-CASE-LAR-10782-1] c 31 N74-14133
- Segmented tubular cushion springs and spring assembly  
[NASA-CASE-ARC-11349-1] c 37 N86-20787
- CIRCULATION CONTROL AIRFOILS**  
Helicopter anti-torque system using strakes  
[NASA-CASE-LAR-13233-1] c 05 N84-33400
- CIRCULATORS (PHASE SHIFT CIRCUITS)**  
Circulator having quarter wavelength resonant post and parametric amplifier circuits utilizing the same Patent  
[NASA-CASE-XNP-02140] c 09 N71-23097
- Dielectric-loaded waveguide circulator for cryogenically cooled and cascaded maser waveguide structures  
[NASA-CASE-NPO-14254-1] c 36 N80-18372
- CIRCUMFERENCES**  
Circumferential pressure probe  
[NASA-CASE-LAR-13775-1] c 35 N90-23706
- CLADDING**  
Seamless metal-clad fiber-reinforced organic matrix composite structures and process for their manufacture  
[NASA-CASE-LAR-13562-1] c 24 N87-18613
- CLAMPING CIRCUITS**  
Amplifier clamping circuit for horizon scanner Patent  
[NASA-CASE-XGS-01784] c 10 N71-20782
- CLAMPS**  
Portable alignment tool Patent  
[NASA-CASE-XMF-01452] c 15 N70-41371
- Hydraulic grip Patent  
[NASA-CASE-XLA-05100] c 15 N71-17696
- Clamping assembly for inertial components Patent  
[NASA-CASE-XMS-02184] c 15 N71-20813
- Central spar and module joint Patent  
[NASA-CASE-XNP-02341] c 15 N71-21531
- Quick attach mechanism Patent  
[NASA-CASE-XFR-05421] c 15 N71-22994
- Prosthetic occlusive device for an internal passageway  
[NASA-CASE-MFS-25740-1] c 52 N84-11744
- Clamp-mount device  
[NASA-CASE-MFS-25510-1] c 37 N84-16560
- Reusable thermal cycling clamp  
[NASA-CASE-LAR-12868-1] c 37 N85-21651
- Self-clamping arc light reflector for welding torch  
[NASA-CASE-MFS-29207-1] c 74 N87-25843
- Releasable clamping apparatus  
[NASA-CASE-MFS-28192-1] c 37 N90-17154
- Tensile film clamps and mounting block for the rheovibron and autovibron viscoelastometer  
[NASA-CASE-LAR-13696-1] c 37 N90-20409
- Power saw  
[NASA-CASE-MSC-21469-1] c 37 N90-26340
- Overcenter coil space station truss fastener  
[NASA-CASE-MSC-21504-1] c 18 N90-26859
- Rotationally actuated prosthetic helping hand  
[NASA-CASE-MFS-28426-1] c 54 N90-27261
- CLAYS**  
Inorganic thermal control pigment Patent  
[NASA-CASE-XNP-02139] c 18 N71-24184
- CLEAN ROOMS**  
Air conditioned suit  
[NASA-CASE-LAR-10076-1] c 05 N73-20137
- CLEANERS**  
Purge device for thrust engines Patent  
[NASA-CASE-XMS-04826] c 28 N71-28849
- Noncontaminating swabs  
[NASA-CASE-MFS-18100] c 15 N72-11390
- Apparatus and method to keep the walls of a free-space reactor free from deposits of solid materials  
[NASA-CASE-NPO-15651-1] c 37 N85-21652
- CLEANING**  
Disk pack cleaning table Patent Application  
[NASA-CASE-LAR-10590-1] c 15 N70-26819
- System for sterilizing objects — cleaning space vehicle systems  
[NASA-CASE-KSC-11085-1] c 54 N81-24724
- Apparatus and method to keep the walls of a free-space reactor free from deposits of solid materials  
[NASA-CASE-NPO-15851-1] c 37 N85-21652
- Self-contained, single-use hose and tubing cleaning module  
[NASA-CASE-MSC-20857-1] c 37 N87-17035
- CLEAR AIR TURBULENCE**  
Clear air turbulence detector  
[NASA-CASE-ERC-10081] c 14 N72-28437
- Clear air turbulence detector  
[NASA-CASE-MFS-21244-1] c 36 N75-15028
- CAT altitude avoidance system  
[NASA-CASE-NPO-15351-1] c 06 N83-10040
- CLEARANCES**  
Active clearance control system for a turbomachine  
[NASA-CASE-LEW-12938-1] c 07 N82-32366
- Control means for a gas turbine engine  
[NASA-CASE-LEW-14586-1] c 07 N83-31603
- CLEAVAGE**  
Crystal cleaving machine  
[NASA-CASE-GSC-12584-1] c 37 N82-32730
- Workpiece positioning vise  
[NASA-CASE-GSC-12762-1] c 37 N84-28083
- CLIMBING FLIGHT**  
Aircraft instrument Patent  
[NASA-CASE-XLA-00487] c 14 N70-40157
- Airplane takeoff and landing performance monitoring system  
[NASA-CASE-LAR-13734-1-CU] c 09 N90-20096
- CLINICAL MEDICINE**  
Process for the preparation of brushite crystals  
[NASA-CASE-ERC-10338] c 04 N72-33072
- Measurement of gas production of microorganisms — using pressure sensors  
[NASA-CASE-LAR-11326-1] c 35 N75-33368
- Production of I-123  
[NASA-CASE-LEW-11390-3] c 25 N76-29379
- Automated clinical system for chromosome analysis  
[NASA-CASE-NPO-13913-1] c 52 N79-12694
- Medical diagnosis system and method with multispectral imaging — depth of burns and optical density of the skin  
[NASA-CASE-NPO-14402-1] c 52 N81-27783
- Process of making medical clip  
[NASA-CASE-LAR-12650-2] c 52 N84-28389
- CLIPS**  
Medical clip  
[NASA-CASE-LAR-12650-1] c 52 N84-28388
- Process of making medical clip  
[NASA-CASE-LAR-12650-2] c 52 N84-28389
- CLOCKS**  
Time synchronization system utilizing moon reflected coded signals Patent  
[NASA-CASE-NPO-10143] c 10 N71-26326
- Counter Patent  
[NASA-CASE-XNP-06234] c 10 N71-27137
- Fault tolerant clock apparatus utilizing a controlled minority of clock elements  
[NASA-CASE-MSC-12531-1] c 35 N75-30504
- Clock setter  
[NASA-CASE-LAR-11458-1] c 35 N76-16392
- Real-time simulation clock  
[NASA-CASE-LAR-14056-1] c 35 N90-23713
- CLOSED CIRCUIT TELEVISION**  
Spacecraft docking and alignment system — using television camera system  
[NASA-CASE-MSC-12559-1] c 18 N76-14186
- CLOSED CYCLES**  
Closed loop ranging system Patent  
[NASA-CASE-XNP-01501] c 21 N70-41930
- Digital phase-locked loop  
[NASA-CASE-GSC-11623-1] c 33 N75-25040
- Lead-oxygen dc power supply system having a closed loop oxygen and water system  
[NASA-CASE-MFS-23059-1] c 44 N76-27664
- CLOSED ECOLOGICAL SYSTEMS**  
Recovery of potable water from human wastes in below-G conditions Patent  
[NASA-CASE-XLA-03213] c 05 N71-11207
- Space vehicle with artificial gravity and earth-like environment  
[NASA-CASE-LEW-11101-1] c 31 N73-32750
- Regenerative device for scrubbing breathable air of CO<sub>2</sub> and moisture without special heat exchanger equipment  
[NASA-CASE-MSC-14771-1] c 54 N77-32722
- Cell and method for electrolysis of water and anode  
[NASA-CASE-MSC-16394-1] c 28 N81-24280
- Method and apparatus for bio-regenerative life support system  
[NASA-CASE-MSC-21629-1] c 54 N89-29027
- CLOSTRIDIUM**  
Production of butanol by fermentation in the presence of cocultures of clostridium  
[NASA-CASE-NPO-16203-1] c 23 N85-35227
- CLOSURES**  
Canister closing device Patent  
[NASA-CASE-XLA-01446] c 15 N71-21528
- Spacesuit torso closure  
[NASA-CASE-ARC-11100-1] c 54 N78-31736
- CLOUD CHAMBERS**  
Heat treating device  
[NASA-CASE-MFS-22938-1] c 34 N76-18374
- CLOUD COVER**  
Cloud cover sensor  
[NASA-CASE-NPO-14936-1] c 47 N83-32232
- CLOUDS (METEOROLOGY)**  
Rocket borne instrument to measure electric fields inside electrified clouds  
[NASA-CASE-KSC-10730-1] c 14 N73-32318
- Electric field measuring and display system — for cloud formations  
[NASA-CASE-KSC-10731-1] c 33 N74-27862
- CLUTCHES**  
Directional gear ratio transmissions  
[NASA-CASE-LAR-12644-1] c 37 N84-28084
- Non-backdrivable free wheeling coupling  
[NASA-CASE-MSC-20475-1] c 37 N87-17037
- Rotary stepping device with memory metal actuator  
[NASA-CASE-NPO-15482-1] c 37 N87-23970
- CLUTTER**  
Clutter free synthetic aperture radar correlator  
[NASA-CASE-NPO-14035-1] c 32 N83-19968
- Method and apparatus for measuring distance  
[NASA-CASE-MSC-20912-1] c 32 N88-26568
- CMOS**  
Complementary DMOS-VMOS integrated circuit structure  
[NASA-CASE-GSC-12190-1] c 33 N79-12321
- COAL**  
Coal-shale interface detection  
[NASA-CASE-MFS-23720-3] c 43 N79-25443
- Thickness measurement system  
[NASA-CASE-MFS-23721-1] c 31 N79-28370
- Coal-rock interface detector  
[NASA-CASE-MFS-23725-1] c 43 N79-31706
- Coal-shale interface detection system  
[NASA-CASE-MFS-23720-2] c 43 N80-14423
- Coal-shale interface detector  
[NASA-CASE-MFS-23720-1] c 43 N80-23711

- Coal desulfurization — using iron pentacarbonyl  
[NASA-CASE-NPO-14272-1] c 25 N81-33246
- Coal desulfurization by aqueous chlorination  
[NASA-CASE-NPO-14902-1] c 25 N82-29371
- Hydrodesulfurization of chlorinated coal  
[NASA-CASE-NPO-15304-1] c 25 N83-31743
- Supercritical multicomponent solvent coal extraction  
[NASA-CASE-NPO-15767-1] c 23 N84-16255
- Supercritical solvent coal extraction  
[NASA-CASE-NPO-15210-1] c 25 N84-22709
- Longwall shearer tracking system  
[NASA-CASE-MFS-25717-1] c 35 N84-33768
- Shuttle car loading system  
[NASA-CASE-NPO-15949-1] c 85 N85-34722
- Fluidized bed desulfurization  
[NASA-CASE-NPO-15924-1] c 25 N85-35253
- COAL GASIFICATION**
- Solar heated fluidized bed gasification system  
[NASA-CASE-NPO-15071-1] c 44 N82-16475
- Pressure letdown method and device for coal conversion systems  
[NASA-CASE-NPO-15100-1] c 44 N84-14583
- Micronized coal burner facility  
[NASA-CASE-LEW-13426-1] c 25 N84-16276
- Liquid hydrogen polygeneration system and process  
[NASA-CASE-KSC-11304-2] c 26 N86-23744
- COAL LIQUEFACTION**
- Surfactant-assisted liquefaction of particulate carbonaceous substances  
[NASA-CASE-NPO-13904-1] c 25 N79-11152
- COAL UTILIZATION**
- Coal desulfurization process  
[NASA-CASE-NPO-13937-1] c 44 N78-31527
- Continuous coal processing method  
[NASA-CASE-NPO-13758-2] c 31 N81-15154
- Fluidized bed coal combustion reactor  
[NASA-CASE-NPO-14273-1] c 25 N82-11144
- COATING**
- Method of coating circuit paths on printed circuit boards with solder Patent  
[NASA-CASE-XMF-01599] c 09 N71-20705
- Process for applying black coating to metals Patent  
[NASA-CASE-XLA-06199] c 15 N71-24875
- Method of forming metal hydride films  
[NASA-CASE-LEW-12083-1] c 37 N78-13436
- Selective coating for solar panels — using black chrome and black nickel  
[NASA-CASE-LEW-12159-1] c 44 N78-19599
- Boron trifluoride coatings for thermoplastic materials and method of applying same in glow discharge  
[NASA-CASE-ARC-11057-1] c 27 N78-31233
- Process for producing a well-adhered durable optical coating on an optical plastic substrate — abrasion resistant polymethyl methacrylate lenses  
[NASA-CASE-ARC-11039-1] c 74 N78-32854
- Contactless pellet fabrication  
[NASA-CASE-NPO-15592-1] c 71 N84-16940
- Corrosion resistant coating  
[NASA-CASE-NPO-15928-1] c 26 N85-29005
- Textured carbon surfaces on copper by sputtering  
[NASA-CASE-LEW-14130-1] c 31 N86-32587
- COATINGS**
- Bonded solid lubricant coating Patent  
[NASA-CASE-XMS-00259] c 18 N70-36400
- High contrast cathode ray tube  
[NASA-CASE-ERC-10468] c 09 N72-20206
- Durable antistatic coating for polymethylmethacrylate  
[NASA-CASE-NPO-13867-1] c 27 N78-14164
- Edge coating of flat wires  
[NASA-CASE-XMF-05757-1] c 31 N79-21227
- Advanced inorganic separators for alkaline batteries and method of making the same  
[NASA-CASE-LEW-13171-2] c 44 N83-32176
- Diamondlike flake composites  
[NASA-CASE-LEW-13837-1] c 24 N84-22695
- Diamondlike flakes  
[NASA-CASE-LEW-13837-2] c 24 N85-21267
- Method for laminar boundary layer transition visualization in flight  
[NASA-CASE-LAR-13554-1] c 02 N89-12551
- Process for making a noble metal on tin oxide catalyst  
[NASA-CASE-LAR-13741-1-SB] c 25 N90-20180
- Method of inseting predesigned disbond areas into composite laminates  
[NASA-CASE-LAR-13225-1] c 24 N90-25197
- COAXIAL CABLES**
- Transmission line thermal short Patent  
[NASA-CASE-XNP-09775] c 09 N71-20445
- Coaxial cable connector Patent  
[NASA-CASE-XNP-04732] c 09 N71-20851
- Transducer circuit and catheter transducer Patent  
[NASA-CASE-ARC-10132-1] c 09 N71-24597
- Collapsible antenna boom and transmission line Patent  
[NASA-CASE-MFS-20068] c 07 N71-27191
- Vibration isolation system using compression springs  
[NASA-CASE-NPO-11012] c 15 N72-11391
- Hermetically sealed semiconductor  
[NASA-CASE-GSC-10791-1] c 15 N73-14469
- System for stabilizing cable phase delay utilizing a coaxial cable under pressure  
[NASA-CASE-NPO-13138-1] c 33 N74-17927
- Refrigerated coaxial coupling — for microwave equipment  
[NASA-CASE-NPO-13504-1] c 33 N75-30430
- High power RF coaxial switch  
[NASA-CASE-NPO-14229-1] c 33 N80-18285
- Coaxial cable connector  
[NASA-CASE-NPO-16764-1-CU] c 33 N88-14270
- COAXIAL PLASMA ACCELERATORS**
- Self-energized plasma compressor  
[NASA-CASE-MFS-22145-2] c 75 N76-17951
- COBALT**
- Process for improving mechanical properties of epoxy resins by addition of cobalt ions  
[NASA-CASE-LAR-13230-1] c 24 N84-34571
- Metal (2,4,4',4'') phthalocyanine tetraamines as curing agents for epoxy resins  
[NASA-CASE-ARC-11424-1] c 27 N85-34281
- COBALT ALLOYS**
- High temperature cobalt-base alloy Patent  
[NASA-CASE-XLE-00726] c 17 N71-15644
- High temperature cobalt-base alloy Patent  
[NASA-CASE-XLE-02991] c 17 N71-16025
- High temperature ferromagnetic cobalt-base alloy Patent  
[NASA-CASE-XLE-03629] c 17 N71-23248
- Cobalt-base alloy  
[NASA-CASE-LEW-10436-1] c 17 N73-32415
- COBALT COMPOUNDS**
- Fabrication of nanometer single crystal metallic CoSi<sub>2</sub> structures on Si  
[NASA-CASE-NPO-17736-1-CU] c 76 N90-17455
- COBALT OXIDES**
- High contrast cathode ray tube  
[NASA-CASE-ERC-10468] c 09 N72-20206
- COCKPIT SIMULATORS**
- Controlled visibility device for an aircraft Patent  
[NASA-CASE-XFR-04147] c 11 N71-10748
- COCKPITS**
- Aircraft canopy lock  
[NASA-CASE-FRC-11065-1] c 05 N83-19737
- CODERS**
- Encoder/decoder system for a rapidly synchronizable binary code Patent  
[NASA-CASE-NPO-10342] c 10 N71-33407
- Modular encoder  
[NASA-CASE-NPO-10629] c 08 N72-18184
- Method and apparatus for decoding compatible convolutional codes  
[NASA-CASE-MSC-14070-1] c 32 N74-32598
- Digital plus analog output encoder  
[NASA-CASE-GSC-12115-1] c 62 N76-31946
- Twin-capacitive shaft angle encoder with analog output signal  
[NASA-CASE-ARC-10897-1] c 33 N77-31404
- VLSI single-chip (255,223) Reed-Solomon encoder with interleaver  
[NASA-CASE-NPO-17280-1-CU] c 17 N80-21061
- CODING**
- Error correcting method and apparatus Patent  
[NASA-CASE-XNP-02748] c 08 N71-22749
- Rate data encoder  
[NASA-CASE-LAR-10128-1] c 08 N73-20217
- Binary concatenated coding system  
[NASA-CASE-MSC-14082-1] c 60 N76-23850
- Differential pulse code modulation  
[NASA-CASE-MSC-12506-1] c 32 N77-12239
- Automatic multi-banking of memory for microprocessors  
[NASA-CASE-NPO-15295-1] c 60 N85-21992
- Method for Viterbi decoding of large constraint length convolutional codes  
[NASA-CASE-NPO-17310-1-CU] c 17 N88-28946
- Electrostatically suspended rotor for angular encoder  
[NASA-CASE-MFS-28294-1] c 31 N90-10310
- COEFFICIENT OF FRICTION**
- Static coefficient test method and apparatus  
[NASA-CASE-GSC-11893-1] c 35 N76-31489
- Locking redundant link  
[NASA-CASE-LAR-11900-1] c 37 N79-14382
- COENZYMES**
- Flavin coenzyme assay  
[NASA-CASE-GSC-10565-1] c 06 N72-25149
- COHERENT ELECTROMAGNETIC RADIATION**
- Folded traveling wave maser structure Patent  
[NASA-CASE-XNP-05219] c 16 N71-15550
- Focused image holography with extended sources Patent  
[NASA-CASE-ERC-10019] c 16 N71-15551
- Off-axis coherently pumped laser  
[NASA-CASE-GSC-12592-1] c 36 N84-28065
- COHERENT LIGHT**
- Hybrid holographic system using reflected and transmitted object beams simultaneously Patent  
[NASA-CASE-MFS-20074] c 16 N71-15565
- Amplitude modulated laser transmitter Patent  
[NASA-CASE-XMS-04269] c 16 N71-22895
- Device for measuring light scattering wherein the measuring beam is successively reflected between a pair of parallel reflectors Patent  
[NASA-CASE-XER-11203] c 14 N71-28994
- COHERENT RADIATION**
- Laser communication system for controlling several functions at a location remote to the laser  
[NASA-CASE-LAR-10311-1] c 16 N73-16536
- Monitoring atmospheric pollutants with a heterodyne radiometer transmitter-receiver  
[NASA-CASE-NPO-11919-1] c 35 N74-11284
- Apparatus for scanning the surface of a cylindrical body  
[NASA-CASE-NPO-11861-1] c 36 N74-20009
- Optically detonated explosive device  
[NASA-CASE-NPO-11743-1] c 28 N74-27425
- Method and apparatus for generating coherent radiation in the ultra-violet region and above by use of distributed feedback  
[NASA-CASE-NPO-13346-1] c 36 N76-29575
- Coherently pulsed laser source  
[NASA-CASE-NPO-15111-1] c 36 N82-29589
- COINCIDENCE CIRCUITS**
- Frequency measurement by coincidence detection with standard frequency  
[NASA-CASE-MSC-14649-1] c 33 N76-16331
- COLD CATHODES**
- Meteoroid detector  
[NASA-CASE-LAR-10483-1] c 14 N73-32327
- COLD GAS**
- Annular arc accelerator shock tube  
[NASA-CASE-NPO-13528-1] c 09 N77-10071
- COLD WELDING**
- Method of cold welding using ion beam technology  
[NASA-CASE-LEW-12982-1] c 37 N81-19455
- COLD WORKING**
- Hydroforming techniques using epoxy molds Patent  
[NASA-CASE-XLE-05641-1] c 15 N71-26346
- COLLAPSE**
- Collapsible pistons  
[NASA-CASE-MSC-13789-1] c 11 N73-32152
- COLLECTION**
- Automatic liquid inventory collecting and dispensing unit  
[NASA-CASE-LAR-11071-1] c 35 N75-19611
- Absorbent product to absorb fluids — for collection of human wastes  
[NASA-CASE-MSC-18223-1] c 24 N82-29382
- Improved method and apparatus for waste collection and storage  
[NASA-CASE-MSC-21025-1] c 31 N87-25495
- Semi-active orbital debris sweeper  
[NASA-CASE-MSC-21534-1] c 18 N90-26860
- COLLIMATION**
- Long range laser traversing system  
[NASA-CASE-GSC-11262-1] c 36 N74-21091
- Optical alignment device  
[NASA-CASE-ARC-10932-1] c 74 N76-22993
- Spatial filter for Q-switched lasers  
[NASA-CASE-LEW-12164-1] c 36 N77-32478
- Dual acting slit control mechanism  
[NASA-CASE-LAR-11370-1] c 35 N80-28686
- Method for shaping and aiming narrow beams — sonar mapping and target identification  
[NASA-CASE-NPO-14632-1] c 32 N82-18443
- Dual laser optical system and method for studying fluid flow  
[NASA-CASE-MFS-25315-1] c 36 N83-29680
- Ion beam accelerator system  
[NASA-CASE-NPO-15547-1] c 72 N84-16959
- Sonic levitation apparatus  
[NASA-CASE-MFS-25828-1] c 71 N84-28568
- Laser schlieren crystal monitor  
[NASA-CASE-MFS-28060-1] c 76 N87-25862
- Ion generator and ion application system  
[NASA-CASE-MFS-28122-1] c 72 N88-24253
- COLLIMATORS**
- X-ray reflection collimator adapted to focus X-radiation directly on a detector Patent  
[NASA-CASE-XHO-04106] c 14 N70-40240
- Collimator of multiple plates with axially aligned identical random arrays of apertures  
[NASA-CASE-MFS-20546-2] c 14 N73-30389
- Multiplate focusing collimator — for scanning small near radiation sources  
[NASA-CASE-MFS-20932-1] c 35 N75-19616

Method for shaping and aiming narrow beams — sonar mapping and target identification  
[NASA-CASE-NPO-14832-1] c 32 N82-18443

Constant magnification optical tracking system  
[NASA-CASE-NPO-14813-1] c 74 N82-24072

Multiprism collimator  
[NASA-CASE-GSC-12608-1] c 74 N83-10900

**COLLISION AVOIDANCE**

Cooperative Doppler radar system Patent  
[NASA-CASE-LAR-10403] c 21 N71-11766

Satellite aided vehicle avoidance system Patent  
[NASA-CASE-ERC-10090] c 21 N71-24948

Stacked array of omnidirectional antennas  
[NASA-CASE-LAR-10545-1] c 09 N72-21244

Display research collision warning system  
[NASA-CASE-HQN-10703] c 21 N73-13643

Apparatus for aiding a pilot in avoiding a midair collision between aircraft  
[NASA-CASE-LAR-10717-1] c 21 N73-30641

Satellite aided vehicle avoidance system  
[NASA-CASE-ERC-10419-1] c 03 N75-30132

**COLLISIONS**

Tool and process for miniature explosive joining of tubes  
[NASA-CASE-LAR-13662-1] c 37 N88-14359

**COLLOIDAL GENERATORS**

Colloid propulsion method and apparatus Patent  
[NASA-CASE-XLE-00817] c 28 N70-33265

**COLLOIDAL PROPELLANTS**

Colloid propulsion method and apparatus Patent  
[NASA-CASE-XLE-00817] c 28 N70-33265

Low viscosity magnetic fluid obtained by the colloidal suspension of magnetic particles Patent  
[NASA-CASE-XLE-01512] c 12 N70-40124

Annular slit colloid thruster Patent  
[NASA-CASE-GSC-10709-1] c 28 N71-25213

**COLLOIDS**

The 2 deg/90 deg laboratory scattering photometer — particulate refractivity in hydrosols  
[NASA-CASE-GSC-12088-1] c 74 N78-13874

**COLOR**

Nondestructive spot test method for magnesium and magnesium alloys  
[NASA-CASE-LAR-10953-1] c 17 N73-27446

Spectrally balanced chromatic landing approach lighting system  
[NASA-CASE-ARC-10990-1] c 04 N82-16059

Method for laminar boundary layer transition visualization in flight  
[NASA-CASE-LAR-13554-1] c 02 N89-12551

**COLOR PHOTOGRAPHY**

Method of recording a gas flow pattern Patent  
[NASA-CASE-XMF-01779] c 12 N71-20815

Method for retarding dye fading during archival storage of developed color photographic film — inert atmosphere  
[NASA-CASE-MFS-23250-1] c 35 N82-11432

**COLOR TELEVISION**

Color television systems using a single gun color cathode ray tube Patent  
[NASA-CASE-ERC-10098] c 09 N71-28618

Color television system  
[NASA-CASE-MSC-12146-1] c 07 N72-17109

Scan converting video tape recorder  
[NASA-CASE-NPO-10166-1] c 07 N73-22076

Scan converting video tape recorder  
[NASA-CASE-NPO-10166-2] c 35 N76-16391

System for producing chroma signals  
[NASA-CASE-MSC-14683-1] c 74 N77-18893

Full color hybrid display for aircraft simulators — landing aids  
[NASA-CASE-ARC-10903-1] c 09 N78-18083

**COLOR VISION**

Color perception tester  
[NASA-CASE-KSC-10278] c 05 N72-16015

**COLUMNS**

Lightweight structural columns — space erectable trusses  
[NASA-CASE-LAR-12095-1] c 31 N81-25258

**COLUMNS (PROCESS ENGINEERING)**

Micropacked column for a chromatographic system  
[NASA-CASE-XNP-04816] c 06 N69-39936

**COLUMNS (SUPPORTS)**

Telescoping columns — parabolic antenna support  
[NASA-CASE-LAR-12185-1] c 31 N81-27324

**COMBINATORIAL ANALYSIS**

Apparatus for computing square roots Patent  
[NASA-CASE-XGS-04768] c 08 N71-19437

**COMBUSTION**

Combustion detector  
[NASA-CASE-LAR-10739-1] c 14 N73-16484

A system for controlling the oxygen content of a gas produced by combustion  
[NASA-CASE-LAR-13257-1] c 25 N84-32447

**COMBUSTION CHAMBERS**

Rocket chamber leak test fixture  
[NASA-CASE-XFR-09479] c 14 N69-27503

Rocket propellant injector Patent  
[NASA-CASE-XLE-00103] c 28 N70-33241

Formed metal ribbon wrap Patent  
[NASA-CASE-XLE-00164] c 15 N70-36411

Injector-valve device Patent  
[NASA-CASE-XLE-00303] c 15 N70-36535

Ignition system for monopropellant combustion devices Patent  
[NASA-CASE-XNP-00249] c 28 N70-38249

Method of making a regeneratively cooled combustion chamber Patent  
[NASA-CASE-XLE-00150] c 28 N70-41818

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Combustor — low nitrogen oxide formation  
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Heat exchanger — rocket combustion chambers and cooling systems  
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[NASA-CASE-NPO-15342-1] c 60 N83-32342  
Method of and apparatus for generating an interstitial point in a data stream having an even number of data points  
[NASA-CASE-MFS-25319-1] c 60 N85-33701  
High speed magneto-resistive random access memory  
[NASA-CASE-NPO-17954-1-CU] c 60 N90-26519

### COMPUTER SYSTEMS DESIGN

Adaptive voting computer system  
[NASA-CASE-MSC-13932-1] c 62 N74-14920  
Computer interface system  
[NASA-CASE-NPO-13428-1] c 60 N77-12721  
Local area network with fault-checking, priorities, and redundant backup  
[NASA-CASE-NPO-16949-1-CU] c 62 N90-19776

### COMPUTER TECHNIQUES

Automated system for identifying traces of organic chemical compounds in aqueous solutions  
[NASA-CASE-NPO-13063-1] c 25 N76-18245  
Apparatus for determining thermophysical properties of test specimens  
[NASA-CASE-LAR-11883-1] c 09 N77-27131  
Computerized system for translating a torch head  
[NASA-CASE-MFS-23620-1] c 37 N79-10421  
Automatic flowmeter calibration system  
[NASA-CASE-KSC-11076-1] c 34 N81-26402  
Method and apparatus for transfer function simulator for testing complex systems  
[NASA-CASE-NPO-15696-1] c 33 N85-34333  
Auto covariance computer  
[NASA-CASE-LAR-12968-1] c 60 N86-21154  
Remote object configuration/orientation determination  
[NASA-CASE-NPO-17436-1-CU] c 35 N89-13764

### COMPUTER VISION

Optically controlled welding system  
[NASA-CASE-MFS-29291-1] c 37 N89-12868

### COMPUTERIZED SIMULATION

Integrated time shared instrumentation display Patent  
[NASA-CASE-XLA-01952] c 08 N71-12507  
Microcomputerized electric field meter diagnostic and calibration system  
[NASA-CASE-KSC-11035-1] c 35 N78-28411  
Simulator method and apparatus for practicing the mating of an observer-controlled object with a target  
[NASA-CASE-MFS-23052-2] c 74 N79-13855  
Method and apparatus for transfer function simulator for testing complex systems  
[NASA-CASE-NPO-15696-1] c 33 N85-34333  
Discrete event simulation tool for analysis of qualitative models of continuous processing systems  
[NASA-CASE-MSC-21465-1] c 61 N90-16410  
Real-time simulation clock  
[NASA-CASE-LAR-14056-1] c 35 N90-23713  
Special purpose parallel computer architecture for real-time control and simulation in robotic applications  
[NASA-CASE-NPO-17629-1-CU] c 60 N90-27268

### COMPUTERS

Telemetry word forming unit  
[NASA-CASE-XNP-09225] c 09 N69-24333  
Data compression processor Patent  
[NASA-CASE-NPO-10068] c 08 N71-19288  
Communications link for computers  
[NASA-CASE-NPO-11161] c 08 N72-25207  
Digital interface for bi-directional communication between a computer and a peripheral device  
[NASA-CASE-MSC-20258-1] c 60 N84-28492  
Ranging system which compares an object reflected component of a light beam to a reference component of the light beam  
[NASA-CASE-NPO-15865-1] c 74 N85-34629  
Auto covariance computer  
[NASA-CASE-LAR-12968-1] c 60 N86-21154  
Bus programmable slave module  
[NASA-CASE-MSC-21387-1] c 61 N90-16411

## CONFINEMENT

Self-checking on-line testable static RAM  
[NASA-CASE-NPO-17839-1-CU] c 60 N90-26518

### CONCAVITY

Concave grating spectrometer Patent  
[NASA-CASE-XGS-01036] c 14 N70-40003

### CONCENTRATORS

Device for directionally controlling electromagnetic radiation Patent  
[NASA-CASE-XLE-01716] c 09 N70-40234  
Thermostatically controlled non-tracking type solar energy concentrator  
[NASA-CASE-NPO-13497-1] c 44 N76-14602  
Three-dimensional tracking solar energy concentrator and method for making same  
[NASA-CASE-NPO-13736-1] c 44 N77-32583  
Non-tracking solar energy collector system  
[NASA-CASE-NPO-13817-1] c 44 N79-11471  
Solar cell module  
[NASA-CASE-NPO-14467-1] c 44 N79-31753  
Solar concentrator  
[NASA-CASE-MFS-23727-1] c 44 N80-14473  
Solar energy receiver for a Stirling engine  
[NASA-CASE-NPO-14619-1] c 44 N81-17518  
Nebulization reflux concentrator  
[NASA-CASE-LAR-13254-1-CU] c 35 N86-29174

### CONCENTRIC CYLINDERS

Flow resistivity instrument  
[NASA-CASE-LAR-13053-1] c 43 N83-29783

### CONCENTRIC SPHERES

Method and apparatus for producing concentric hollow spheres — inertial confinement fusion targets  
[NASA-CASE-NPO-14596-1] c 31 N81-33319  
Method and apparatus for producing gas-filled hollow spheres — target pellets for inertial confinement fusion  
[NASA-CASE-NPO-14596-3] c 31 N83-31896

### CONDENSATES

Apparatus for testing polymeric materials Patent  
[NASA-CASE-XNP-09699] c 06 N71-24607  
Condensate removal device for heat exchanger  
[NASA-CASE-MSC-14143-1] c 77 N75-20139  
Method of evaporation  
[NASA-CASE-NPO-15609-2] c 25 N88-23846

### CONDENSERS (LIQUEFIERS)

Condenser - Separator  
[NASA-CASE-XLA-08645] c 15 N69-21465  
Condensate removal device for heat exchanger  
[NASA-CASE-MSC-14143-1] c 77 N75-20139

### CONDENSING

Preparation of heterocyclic block copolymer omega-diamidoximes  
[NASA-CASE-ARC-11060-1] c 27 N79-22300

### CONDUCTING FLUIDS

Multiducted electromagnetic pump Patent  
[NASA-CASE-NPO-10755] c 15 N71-27084  
Internally supported flexible duct joint — device for conducting fluids in high pressure systems  
[NASA-CASE-MFS-19193-1] c 37 N75-19686

### CONDUCTION ELECTRONS

Alternating gradient photodetector  
[NASA-CASE-NPO-17235-1-CU] c 35 N90-21358

### CONDUCTIVE HEAT TRANSFER

Enthalpy and stagnation temperature determination of a high temperature laminar flow gas stream Patent  
[NASA-CASE-XLE-00266] c 14 N70-34156  
Space suit heat exchanger Patent  
[NASA-CASE-XMS-09571] c 05 N71-19439  
Compact pulsed laser having improved heat conductance  
[NASA-CASE-NPO-13147-1] c 36 N77-25502  
Automatic thermal switch  
[NASA-CASE-GSC-12415-1] c 33 N82-24419

### CONDUCTIVITY

Integrated circuit reliability testing  
[NASA-CASE-NPO-17393-1-CU] c 33 N89-29679

### CONDUCTORS

Extensible cable support Patent  
[NASA-CASE-XMF-07587] c 15 N71-18701  
Method for making conductors for ferrite memory arrays — from pre-formed metal conductors  
[NASA-CASE-LAR-10994-1] c 24 N75-13032

### CONES

Conically shaped cavity radiometer with a dual purpose cone winding Patent  
[NASA-CASE-XNP-09701] c 14 N71-26475

### CONFIGURATION MANAGEMENT

Reconfigurable work station for a video display unit and keyboard  
[NASA-CASE-MFS-26009-1-SB] c 54 N88-24163  
Method and apparatus for configuration control of redundant robots  
[NASA-CASE-NPO-17801-1-CU] c 37 N90-27110

### CONFINEMENT

Observation window for a gas confining chamber  
[NASA-CASE-NPO-10890] c 11 N73-12265



## CONICAL BODIES

- Conical valve plug Patent  
[NASA-CASE-XLE-00715] c 15 N70-34859
- Conical reflector antenna  
[NASA-CASE-NPO-10303] c 07 N72-22127
- Multiple reflection conical microwave antenna  
[NASA-CASE-NPO-11661] c 07 N73-14130
- Almond test body — for microwave anechoic chambers  
[NASA-CASE-LAR-13747-1-CU] c 32 N89-28672

## CONICAL SCANNING

- Conical scan tracking system employing a large antenna  
[NASA-CASE-NPO-14009-1] c 32 N79-13214

## CONICAL SHELLS

- Device for determining the accuracy of the flare on a flared tube  
[NASA-CASE-XKS-03495] c 14 N69-39785
- Foldable solar concentrator Patent  
[NASA-CASE-XLA-04622] c 03 N70-41580
- Apparatus for machining geometric cones Patent  
[NASA-CASE-XMS-04292] c 15 N71-22722

## CONJUGATES

- Phase conjugation method and apparatus for an active retrodirective antenna array  
[NASA-CASE-NPO-13641-1] c 32 N79-24210

## CONNECTORS

- Connector strips-positive, negative and T tabs  
[NASA-CASE-XGS-01395] c 03 N69-21539
- Quick release connector Patent  
[NASA-CASE-XLA-01141] c 15 N71-13789
- Flared tube strainer  
[NASA-CASE-XLA-05056] c 15 N72-11389
- Process for making RF shielded cable connector assemblies and the products formed thereby  
[NASA-CASE-GSC-11215-1] c 09 N73-28083
- Low heat leak connector for cryogenic system  
[NASA-CASE-XLE-02367-1] c 31 N79-21225
- Clamp-mount device  
[NASA-CASE-MFS-25510-1] c 37 N84-16560
- Apparatus for releasably connecting first and second objects in predetermined space relationship  
[NASA-CASE-MSC-18969-1] c 18 N84-22605
- Connection system — insuring against loss of a tool component without using multiple tethers  
[NASA-CASE-MSC-20319-1] c 37 N85-21649
- Toggle release  
[NASA-CASE-MSC-21354-1] c 37 N88-24969
- Collet lock joint for space station truss  
[NASA-CASE-MSC-21207-1] c 37 N88-29180
- Vortex motion phase separator for zero gravity liquid transfer  
[NASA-CASE-KSC-11387-1] c 29 N90-20236

## CONSCIOUSNESS

- EEG sleep analyzer and method of operation Patent  
[NASA-CASE-MSC-13282-1] c 05 N71-24729

## CONSISTENCY

- Constant-output atomizer — Inhalation therapy and aerosol research  
[NASA-CASE-MFS-25631-1] c 34 N84-12406

## CONSOLES

- Telephone multiline signaling using common signal pair  
[NASA-CASE-KSC-11023-1] c 32 N79-23310

## CONSTANTS

- Spring operated accelerator and constant force spring mechanism therefor  
[NASA-CASE-ARC-10898-1] c 35 N77-18417

## CONSTRAINTS

- Passive caging mechanism Patent  
[NASA-CASE-GSC-10306-1] c 15 N71-24694
- Cable restraint  
[NASA-CASE-LAR-10129-1] c 15 N73-25512
- Restraint system for ergometer  
[NASA-CASE-MFS-21046-1] c 14 N73-27377
- Reefing system  
[NASA-CASE-LAR-10129-2] c 37 N74-20063
- Restraining mechanism  
[NASA-CASE-MSC-13054] c 54 N78-17677
- Spine immobilization apparatus  
[NASA-CASE-ARC-11167-1] c 52 N81-25662

## CONSTRUCTION MATERIALS

- Foldable construction block  
[NASA-CASE-MSC-12233-1] c 15 N72-25454
- Foldable construction block  
[NASA-CASE-MSC-12233-2] c 32 N73-13921
- Structural panels  
[NASA-CASE-ARC-11429-2-CU] c 27 N87-22845

## CONTACT POTENTIALS

- Ionospheric battery Patent  
[NASA-CASE-XGS-01593] c 03 N70-35408

## CONTAINERLESS MELTS

- Method of crystallization — in gravity-free environments  
[NASA-CASE-MFS-23001-1] c 76 N77-32919

- Gas levitator having fixed levitation node for containerless processing  
[NASA-CASE-MFS-25509-1] c 35 N83-24828
- Method and apparatus for supercooling and solidifying substances  
[NASA-CASE-MFS-25242-1] c 35 N83-29650
- Apparatus for production of ultrapure amorphous metals utilizing acoustic cooling  
[NASA-CASE-NPO-15658-1] c 26 N86-32551
- Quasi-containerless glass formation method and apparatus  
[NASA-CASE-MFS-28090-1] c 27 N87-21111
- Apparatus and method for quiescent containerless processing of high temperature metals and alloys in low gravity  
[NASA-CASE-MFS-28087-1] c 35 N87-23944
- Sample levitation and melt in microgravity  
[NASA-CASE-NPO-17022-1-CU] c 29 N87-25489

## CONTAINERS

- Fluid containers and resealable septum therefor Patent  
[NASA-CASE-NPO-10123] c 15 N71-24835
- Method for detecting leaks in hermetically sealed containers Patent  
[NASA-CASE-ERC-10045] c 15 N71-24910
- Apparatus for detecting the amount of material in a resonant cavity container Patent  
[NASA-CASE-XNP-02500] c 18 N71-27397

## CONTAINMENT

- Hemispherical latching apparatus  
[NASA-CASE-MFS-25837-1] c 18 N85-29991

## CONTAMINANTS

- Apparatus for purging systems handling toxic, corrosive, noxious and other fluids Patent  
[NASA-CASE-XMS-01905] c 12 N71-21089
- Method and apparatus for mapping the distribution of chemical elements in an extended medium  
[NASA-CASE-GSC-12808-1] c 25 N85-21279
- Ballast system for maintaining constant pressure in a glove box  
[NASA-CASE-NPO-17786-1-CU] c 35 N90-17104

## CONTAMINATION

- Spectral method for monitoring atmospheric contamination of inert-gas welding shields Patent  
[NASA-CASE-XMF-02039] c 15 N71-15871
- Separation nut Patent  
[NASA-CASE-XGS-01971] c 15 N71-15922
- Gas liquefaction and dispensing apparatus Patent  
[NASA-CASE-NPO-10070] c 15 N71-27372
- Bacterial contamination monitor  
[NASA-CASE-GSC-10879-1] c 14 N72-25413
- Biocontamination and particulate detection system  
[NASA-CASE-NPO-13953-1] c 35 N79-28527

## CONTINUOUS RADIATION

- CW ultrasonic bolt tensioning monitor  
[NASA-CASE-LAR-12016-1] c 39 N78-15512
- Pseudo continuous wave instrument — ultrasonics  
[NASA-CASE-LAR-12260-1] c 35 N79-10390
- Low-frequency radio navigation system  
[NASA-CASE-NPO-15264-1] c 04 N84-27713

## CONTINUOUS WAVE LASERS

- High power laser apparatus and system  
[NASA-CASE-XLE-2529-2] c 36 N75-27364
- Continuous plasma laser — method and apparatus for producing intense, coherent, monochromatic light from low temperature plasma  
[NASA-CASE-XNP-04167-3] c 36 N77-19416
- Stark effect spectrophotometer for continuous absorption spectra monitoring — a technique for gas analysis  
[NASA-CASE-NPO-15102-1] c 25 N81-25159
- Coherently pulsed laser source  
[NASA-CASE-NPO-15111-1] c 36 N82-29589
- Spectrophotometer stabilized laser with line center offset frequency control  
[NASA-CASE-NPO-15516-1] c 36 N84-22943

## CONTINUOUS WAVE RADAR

- Phase-locked loop with sideband rejecting properties Patent  
[NASA-CASE-XNP-02723] c 07 N70-41680
- FM/CW radar system  
[NASA-CASE-MFS-22234-1] c 32 N79-10264
- Method and apparatus for measuring distance  
[NASA-CASE-MSC-20912-1] c 32 N88-26568

## CONTINUUM FLOW

- Energy efficient continuous flow ash lockhopper  
[NASA-CASE-NPO-16985-1-CU] c 31 N88-24814

## CONTOUR SENSORS

- Antenna surface contour control system  
[NASA-CASE-LAR-13798-1] c 32 N89-25363

## CONTOURS

- Contour surveying system Patent  
[NASA-CASE-XLA-08646] c 14 N71-17586
- Contourograph system for monitoring electrocardiograms  
[NASA-CASE-MSC-13407-1] c 10 N72-20225

- Variable contour securing system  
[NASA-CASE-MSC-16270-1] c 37 N78-27423
- Device for measuring the contour of a surface  
[NASA-CASE-LAR-11869-1] c 74 N78-27904
- Contour detector and data acquisition system for the left ventricular outline  
[NASA-CASE-ARC-10985-1] c 52 N79-10724
- Contour measurement system  
[NASA-CASE-MFS-23726-1] c 43 N79-26439
- Cork-resin ablative insulation for complex surfaces and method for applying the same  
[NASA-CASE-MFS-23626-1] c 24 N80-26388
- Surface conforming thermal/pressure seal — tail assemblies of space shuttle orbiters  
[NASA-CASE-MSC-18422-1] c 37 N82-16408
- Method and apparatus for contour mapping using synthetic aperture radar  
[NASA-CASE-NPO-15939-1] c 43 N86-19711

## CONTROL

- Dual latching solenoid valve Patent  
[NASA-CASE-XMS-05890] c 09 N71-23191
- Apparatus for testing a pressure responsive instrument Patent  
[NASA-CASE-XMF-04134] c 14 N71-23755
- Failure detection and control means for improved drift performance of a gimbaled platform system  
[NASA-CASE-MFS-23551-1] c 04 N76-26175
- Power factor control system for ac induction motors  
[NASA-CASE-MFS-23988-1] c 33 N81-27395
- Control means for a solid state crossbar switch  
[NASA-CASE-NPO-15066-1] c 33 N82-29538
- Television camera video level control system  
[NASA-CASE-MSC-18578-1] c 32 N85-21427

## CONTROL BOARDS

- Pressure monitoring with a plurality of ionization gauges controlled at a central location Patent  
[NASA-CASE-XLE-00787] c 14 N71-21090

## CONTROL DATA (COMPUTERS)

- Computer interface system  
[NASA-CASE-NPO-13428-1] c 60 N77-12721

## CONTROL EQUIPMENT

- Stepping motor control circuit Patent  
[NASA-CASE-GSC-10366-1] c 10 N71-18772
- Drift compensation circuit for analog to digital converter Patent  
[NASA-CASE-XNP-04780] c 08 N71-19687
- Attitude controls for VTOL aircraft Patent  
[NASA-CASE-XAC-08972] c 02 N71-20570
- Control device Patent  
[NASA-CASE-XAC-10019] c 15 N71-23809
- Controlled release device Patent  
[NASA-CASE-XKS-03338] c 15 N71-24043
- Dual polarity full wave dc motor drive Patent  
[NASA-CASE-XNP-07477] c 09 N71-26092
- Digital memory in which the driving of each word location is controlled by a switch core Patent  
[NASA-CASE-XNP-01466] c 10 N71-26434
- Fluid jet amplifier Patent  
[NASA-CASE-XLE-09341] c 12 N71-28741
- System for controlling the operation of a variable signal device  
[NASA-CASE-NPO-11064] c 07 N72-11150
- Solid state remote circuit selector switch  
[NASA-CASE-LEW-10387] c 09 N72-22201
- Synchronous orbit battery cyclers  
[NASA-CASE-GSC-11211-1] c 03 N72-25020
- Infinite range electronics gain control circuit  
[NASA-CASE-GSC-10786-1] c 10 N72-28241
- Interferometric rotation sensor  
[NASA-CASE-ARC-10278-1] c 14 N73-25463
- Digital controller for a Baum folding machine — providing automatic counting and machine shutoff  
[NASA-CASE-LAR-10688-1] c 37 N74-21056
- Flow control valve — for high temperature fluids  
[NASA-CASE-NPO-11951-1] c 37 N74-21065
- Variable ratio mixed-mode bilateral master-slave control system for shuttle remote manipulator system  
[NASA-CASE-MSC-14245-1] c 18 N75-27041
- Anthropomorphic master/slave manipulator system  
[NASA-CASE-ARC-10756-1] c 54 N77-32721
- Power factor control system for AC induction motors  
[NASA-CASE-MFS-23280-1] c 33 N78-10376
- Variable cycle gas turbine engines  
[NASA-CASE-LEW-12916-1] c 37 N78-17384
- Control for nuclear thermionic power source  
[NASA-CASE-NPO-13114-2] c 73 N78-28913
- Illumination control apparatus for compensating solar light  
[NASA-CASE-KSC-11010-1] c 74 N79-12890
- Dual acting slit control mechanism  
[NASA-CASE-LAR-11370-1] c 35 N80-28686
- Pneumatic inflatable end effector  
[NASA-CASE-MFS-23696-1] c 54 N81-26718
- Means for controlling aerodynamically induced twist  
[NASA-CASE-LAR-12175-1] c 05 N82-28279

Electronic system for high power load control — solar arrays  
[NASA-CASE-NPO-15358-1] c 33 N83-27126

Pulsed thyristor trigger control circuit  
[NASA-CASE-MFS-25616-1] c 33 N84-16455

Magnetic spin reduction system for free spinning objects  
[NASA-CASE-MFS-25966-1] c 16 N86-26352

Apparatus and method of capturing an orbiting spacecraft  
[NASA-CASE-MSC-20979-1] c 37 N87-22885

Controlled sample orientation and rotation in an acoustic levitator  
[NASA-CASE-NPO-17088-1-CU] c 35 N89-14422

Semi-active orbital debris sweeper  
[NASA-CASE-MSC-21534-1] c 18 N90-26860

**CONTROL ROCKETS**  
Decomposition unit Patent  
[NASA-CASE-XMS-00583] c 28 N70-38504

**CONTROL RODS**  
Null device for hand controller Patent  
[NASA-CASE-XLA-01808] c 15 N71-20740

**CONTROL SIMULATION**  
Helmet weight simulator  
[NASA-CASE-LAR-12320-1] c 54 N81-27806

**CONTROL STABILITY**  
Apparatus for sensor failure detection and correction in a gas turbine engine control system  
[NASA-CASE-LEW-12907-2] c 07 N81-19115

Apparatus for damping operator induced oscillations of a controlled system — flight control  
[NASA-CASE-FRC-11041-1] c 33 N82-18493

Controlled sample orientation and rotation in an acoustic levitator  
[NASA-CASE-NPO-17088-1-CU] c 35 N89-14422

**CONTROL SURFACES**  
Conical valve plug Patent  
[NASA-CASE-XLE-00715] c 15 N70-34859

Attitude control for spacecraft Patent  
[NASA-CASE-XNP-02982] c 31 N70-41855

Vortex-lift roll-control device  
[NASA-CASE-LAR-11868-2] c 08 N79-14108

Aerodynamic side-force alleviator means  
[NASA-CASE-LAR-12326-1] c 02 N81-14968

Thermal barrier pressure seal — shielding junctions between spacecraft control surfaces and structures  
[NASA-CASE-MSC-18134-1] c 37 N81-15363

Control surface actuator  
[NASA-CASE-LAR-12852-1] c 05 N89-11738

**CONTROL SYSTEMS DESIGN**  
Reactant pressure differential control for fuel cell gases  
[NASA-CASE-MSC-20127-2] c 37 N85-34403

Brushless DC motor control system responsive to control signals generated by a computer or the like  
[NASA-CASE-NPO-16420-1] c 33 N86-20681

ARC length control for plasma welding  
[NASA-CASE-MSC-20900-1] c 37 N88-30131

Spacecraft component heater control system  
[NASA-CASE-MFS-28327-1] c 18 N89-28558

Method and circuit for controlling the evolution time interval of a laser output pulse  
[NASA-CASE-LAR-13772-1] c 36 N89-28818

Robust high-performance control for robotic manipulators  
[NASA-CASE-NPO-17785-1-CU] c 37 N89-28846

A combined air and water pollution control system  
[NASA-CASE-NST-00007-1] c 45 N89-28967

Docking mechanism for spacecraft  
[NASA-CASE-MSC-21386-1] c 18 N90-20126

Balanced bridge feedback control system  
[NASA-CASE-NPO-17430-1-CU] c 33 N90-21951

Long period pseudo random number sequence generator  
[NASA-CASE-NPO-17241-1-CU] c 33 N90-23638

**CONTROL THEORY**  
Robust high-performance control for robotic manipulators  
[NASA-CASE-NPO-17785-1-CU] c 37 N89-28846

**CONTROL UNITS (COMPUTERS)**  
Self-testing and repairing computer Patent  
[NASA-CASE-NPO-10567] c 08 N71-24633

**CONTROL VALVES**  
Electromechanical actuator  
[NASA-CASE-XNP-05975] c 15 N69-23185

Full flow with shut off and selective drainage control valve Patent application  
[NASA-CASE-ERC-10208] c 15 N70-10867

Conical valve plug Patent  
[NASA-CASE-XLE-00715] c 15 N70-34859

Control valve and co-axial variable injector Patent  
[NASA-CASE-XNP-09702] c 15 N71-17654

Electrohydrodynamic control valve Patent  
[NASA-CASE-NPO-10416] c 12 N71-27332

Force-balanced, throttle valve Patent  
[NASA-CASE-NPO-10808] c 15 N71-27432

Dual stage check valve  
[NASA-CASE-MSC-13587-1] c 15 N73-30459

Airflow control system for supersonic inlets  
[NASA-CASE-LEW-11188-1] c 02 N74-20646

Ultrasonically bonded valve assembly  
[NASA-CASE-NPO-13360-1] c 37 N75-25185

Pressure modulating valve  
[NASA-CASE-MSC-14905-1] c 37 N77-28487

Fluid valve assembly  
[NASA-CASE-MSC-12731-1] c 37 N78-25426

Flow diverter valve and flow diversion method  
[NASA-CASE-HQN-00573-1] c 37 N79-33468

Quartz ball valve  
[NASA-CASE-NPO-14473-1] c 37 N80-23654

Pressure control valve — inflating flexible bladders  
[NASA-CASE-ARC-11251-1] c 37 N81-17433

Electrical servo actuator bracket — fuel control valves on jet engines  
[NASA-CASE-FRC-11044-1] c 37 N81-33483

Control means for a gas turbine engine  
[NASA-CASE-LEW-14586-1] c 07 N83-31603

Slow opening valve — valve design for shuttle portable oxygen system  
[NASA-CASE-MSC-20112-1] c 37 N85-20338

Remotely controllable mixing system  
[NASA-CASE-MFS-28153-1] c 31 N86-32589

Dual motion valve with single motion input  
[NASA-CASE-MFS-28058-1] c 37 N87-21332

Monogroove cold plate  
[NASA-CASE-MSC-20846-1] c 34 N87-28867

**CONTROLLED ATMOSPHERES**  
Electrical connector Patent Application  
[NASA-CASE-MFS-14741] c 09 N70-20737

High voltage pulse generator Patent  
[NASA-CASE-MSC-12178-1] c 09 N71-13518

Exposure system for animals Patent  
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[NASA-CASE-GSC-12059-1] c 35 N77-27366  
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[NASA-CASE-GSC-12429-1] c 37 N81-14320  
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[NASA-CASE-MSC-20475-1] c 37 N87-17037  
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- CRACK OPENING DISPLACEMENT**  
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- CRACK PROPAGATION**  
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- CRACKING (FRACTURING)**  
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[NASA-CASE-NPO-10271] c 17 N71-16393  
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[NASA-CASE-LEW-14262-1] c 26 N87-28647
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[NASA-CASE-NPO-10070] c 15 N71-27372
- CRITICAL TEMPERATURE**  
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[NASA-CASE-NPO-13283] c 38 N78-17395  
Method and apparatus for calibrating the ionosphere and application to surveillance of geophysical events  
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[NASA-CASE-LAR-13019-1] c 07 N85-35194  
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Trimerization of aromatic nitriles  
[NASA-CASE-LEW-12053-1] c 27 N78-15276  
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Method for growing low defect, high purity crystalline layers utilizing lateral overgrowth of a patterned mask  
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Magnetic matrix memory system Patent  
[NASA-CASE-XMF-05835] c 08 N71-12504

Asynchronous, multiplexing, single line transmission and recovery data system — for satellite use  
[NASA-CASE-NPO-13321-1] c 32 N75-26195

**DATA SAMPLING**

Reduced bandwidth video communication system utilizing sampling techniques Patent  
[NASA-CASE-XNP-02791] c 07 N71-23026

Signal processing apparatus for multiplex transmission Patent  
[NASA-CASE-NPO-10388] c 07 N71-24622

Television signal processing system Patent  
[NASA-CASE-NPO-10140] c 07 N71-24742

Method and apparatus for data compression by a decreasing slope threshold test  
[NASA-CASE-NPO-10769] c 08 N72-11171

Sampling video compression system  
[NASA-CASE-ARC-10984-1] c 32 N77-24328

CCD correlated quadruple sampling processor  
[NASA-CASE-NPO-14426-1] c 33 N81-27396

**DATA SMOOTHING**

Variable time constant smoothing circuit Patent  
[NASA-CASE-XGS-01983] c 10 N70-41964

Smoothing filter for digital to analog conversion  
[NASA-CASE-FRC-11025-1] c 33 N82-24417

**DATA STORAGE**

Data handling system based on source significance, storage availability and data received from the source Patent Application  
[NASA-CASE-XNP-04162-1] c 08 N70-34675

Magnetic matrix memory system Patent  
[NASA-CASE-XMF-05835] c 08 N71-12504

Tape guidance system and apparatus for the provision thereof Patent  
[NASA-CASE-XNP-09453] c 08 N71-19420

Event recorder Patent  
[NASA-CASE-XLA-01832] c 14 N71-21006

System for recording and reproducing pulse code modulated data Patent  
[NASA-CASE-XGS-01021] c 08 N71-21042

Incremental tape recorder and data rate converter Patent  
[NASA-CASE-XNP-02778] c 08 N71-22710

Multiple hologram recording and readout system Patent  
[NASA-CASE-ERC-10151] c 16 N71-29131

Dual purpose momentum wheels for spacecraft with magnetic recording  
[NASA-CASE-NPO-11481] c 21 N73-13644

Data storage, image tube type  
[NASA-CASE-MSC-14053-1] c 60 N74-12888

Lightning current waveform measuring system  
[NASA-CASE-KSC-11018-1] c 33 N79-10337

Rapidly quantifying the relative distention of a human bladder  
[NASA-CASE-LAR-13901-1-NP] c 52 N90-21519

Analog hardware for learning neural networks  
[NASA-CASE-NPO-17664-1-CU] c 62 N90-27384

**DATA STRUCTURES**

Real-time garbage collection for list processing  
[NASA-CASE-MSC-20964-1] c 60 N87-14863

**DATA SYSTEMS**

Data handling system based on source significance, storage availability and data received from the source Patent Application  
[NASA-CASE-XNP-04162-1] c 08 N70-34675

Rate augmented digital to analog converter Patent  
[NASA-CASE-XLA-07828] c 08 N71-27057

Method and apparatus for decoding compatible convolutional codes  
[NASA-CASE-MSC-14070-1] c 32 N74-32598

**DATA TRANSFER (COMPUTERS)**

Data transfer system Patent  
[NASA-CASE-NPO-12107] c 08 N71-27255

**DATA TRANSMISSION**

Telemetry word forming unit  
[NASA-CASE-XNP-09225] c 09 N69-24333

Phase-shift data transmission system having a pseudo-noise SYNC code modulated with the data in a single channel Patent  
[NASA-CASE-XNP-00911] c 08 N70-41961

Data compression system with a minimum time delay unit Patent  
[NASA-CASE-XNP-08832] c 08 N71-12506

Data compression processor Patent  
[NASA-CASE-NPO-10068] c 08 N71-19288

Wide range data compression system Patent  
[NASA-CASE-XGS-02612] c 08 N71-19435

Phase quadrature-plural channel data transmission system Patent  
[NASA-CASE-XAC-06302] c 08 N71-19763

Reduced bandwidth video communication system utilizing sampling techniques Patent  
[NASA-CASE-XNP-02791] c 07 N71-23026



- Frequency shift keying apparatus Patent  
[NASA-CASE-XGS-01537] c 07 N71-23405
- Decoder system Patent  
[NASA-CASE-NPO-10118] c 07 N71-24741
- Data compression system  
[NASA-CASE-NPO-11243] c 07 N72-20154
- Multichannel telemetry system  
[NASA-CASE-NPO-11572] c 07 N73-16121
- Automated attendance accounting system  
[NASA-CASE-NPO-11456] c 08 N73-26176
- System for generating timing and control signals  
[NASA-CASE-NPO-13125-1] c 33 N75-19519
- Sampling video compression system  
[NASA-CASE-ARC-10984-1] c 32 N77-24328
- Pseudo noise code and data transmission method and apparatus  
[NASA-CASE-GSC-12017-1] c 32 N77-30308
- Multi-channel rotating optical interface for data transmission  
[NASA-CASE-NPO-14066-1] c 74 N79-34011
- System for a displaying at a remote station data generated at a central station and for powering the remote station from the central station  
[NASA-CASE-GSC-12411-1] c 33 N81-14221
- Digital interface for bi-directional communication between a computer and a peripheral device  
[NASA-CASE-MSC-20258-1] c 60 N84-28492
- Single frequency multitransmitter telemetry  
[NASA-CASE-LAR-13006-1] c 17 N87-16863
- VLSI single-chip (255,223) Reed-Solomon encoder with interleaver  
[NASA-CASE-NPO-17280-1-CU] c 17 N90-21081
- DAWSONITE**  
Synthesis of dawsonites — for use in fire extinguishing operations  
[NASA-CASE-ARC-11326-1] c 25 N83-33977
- DEBRIS**  
Counter pumping debris excluder and separator — gas turbine shaft seals  
[NASA-CASE-LEW-11855-1] c 07 N78-25090
- Hypervelocity impact shield  
[NASA-CASE-MSC-21420-1] c 18 N90-26858
- DECAY RATES**  
Solar sensor having coarse and fine sensing with matched preirradiated cells and method of selecting cells Patent  
[NASA-CASE-XLA-01584] c 14 N71-23269
- DECELERATION**  
Assembly for recovering a capsule Patent  
[NASA-CASE-XMF-00641] c 31 N70-38410
- Discrete local altitude sensing device Patent  
[NASA-CASE-XMS-03792] c 14 N70-41812
- Hot air balloon deceleration and recovery system Patent  
[NASA-CASE-XLA-06824-2] c 02 N71-11037
- Zero gravity apparatus Patent  
[NASA-CASE-XMF-06515] c 14 N71-23227
- DECIMALS**  
High speed direct binary to binary coded decimal converter and scaler  
[NASA-CASE-KSC-10595] c 08 N73-12176
- DECISION MAKING**  
Method and apparatus for decoding compatible convolutional codes  
[NASA-CASE-MSC-14070-1] c 32 N74-32598
- Method for Viterbi decoding of large constraint length convolutional codes  
[NASA-CASE-NPO-17310-1-CU] c 17 N88-28946
- DECODERS**  
Serial digital decoder Patent  
[NASA-CASE-NPO-10150] c 08 N71-24650
- BCD to decimal decoder Patent  
[NASA-CASE-XKS-06167] c 08 N71-24890
- Encoder/decoder system for a rapidly synchronizable binary code Patent  
[NASA-CASE-NPO-10342] c 10 N71-33407
- Compact bi-phase pulse coded modulation decoder  
[NASA-CASE-KSC-10834-1] c 33 N76-14371
- Low distortion receiver for bi-level baseband PCM waveforms  
[NASA-CASE-MSC-14557-1] c 32 N76-16249
- Three phase full wave dc motor decoder  
[NASA-CASE-GSC-11824-1] c 33 N77-26386
- Decommutator patchboard verifier  
[NASA-CASE-KSC-11065-1] c 33 N81-26359
- Reed-Solomon decoder  
[NASA-CASE-NPO-15982-1] c 60 N87-21591
- Miniaturization of flight deflection measurement system  
[NASA-CASE-LAR-13628-1] c 35 N90-23707
- VLSI architecture for a Reed-Solomon decoder  
[NASA-CASE-NPO-17897-1-CU] c 33 N90-27040
- DECODING**  
Decoder system Patent  
[NASA-CASE-NPO-10118] c 07 N71-24741
- Versatile arithmetic unit for high speed sequential decoder  
[NASA-CASE-NPO-11371] c 08 N73-12177
- Method and apparatus for decoding compatible convolutional codes  
[NASA-CASE-MSC-14070-1] c 32 N74-32598
- Differential pulse code modulation  
[NASA-CASE-MSC-12506-1] c 32 N77-12239
- Method for Viterbi decoding of large constraint length convolutional codes  
[NASA-CASE-NPO-17310-1-CU] c 17 N88-28946
- DECOMMUTATORS**  
Decommutator patchboard verifier  
[NASA-CASE-KSC-11065-1] c 33 N81-26359
- Memory-based parallel data output controller  
[NASA-CASE-GSC-12447-2] c 60 N84-28491
- DECONTAMINATION**  
Decontamination of petroleum products Patent  
[NASA-CASE-XNP-03835] c 06 N71-23499
- Helium refrigerator and method for decontaminating the refrigerator  
[NASA-CASE-NPO-10634] c 23 N72-25619
- Plasma cleaning device — designed for high vacuum environments  
[NASA-CASE-MFS-22906-1] c 75 N78-27913
- DEEP SPACE NETWORK**  
Low phase noise digital frequency divider  
[NASA-CASE-NPO-11569] c 10 N73-26229
- DEFECTS**  
Hybrid holographic non-destructive test system  
[NASA-CASE-MFS-23114-1] c 38 N78-32447
- DEFLECTION**  
Bipropellant injector  
[NASA-CASE-XNP-09461] c 28 N72-23809
- Noncontacting method for measuring angular deflection  
[NASA-CASE-LAR-12178-1] c 74 N80-21138
- Miniaturization of flight deflection measurement system  
[NASA-CASE-LAR-13628-1] c 35 N90-23707
- DEFLECTORS**  
Inlet deflector for jet engines Patent  
[NASA-CASE-XLE-00388] c 28 N70-34788
- Aircraft wheel spray drag alleviator Patent  
[NASA-CASE-XLA-01583] c 02 N70-36825
- Ion beam deflector Patent  
[NASA-CASE-LEW-10689-1] c 28 N71-26173
- Exhaust flow deflector — for ducted gas flow  
[NASA-CASE-LAR-11570-1] c 34 N76-18364
- Safety shield for vacuum/pressure chamber viewing port  
[NASA-CASE-GSC-12513-1] c 31 N81-19343
- DEFOCUSING**  
Retrodiffractive modulator Patent  
[NASA-CASE-GSC-10062] c 14 N71-15605
- DEFORMATION**  
Arbitrarily shaped model survey system Patent  
[NASA-CASE-LAR-10098] c 32 N71-26681
- Low cycle fatigue testing machine  
[NASA-CASE-LAR-10270-1] c 32 N72-25877
- Deformable bearing seat  
[NASA-CASE-LEW-12527-1] c 37 N77-32500
- DEGASSING**  
Degassifying and mixing apparatus for liquids — potable water for spacecraft  
[NASA-CASE-MSC-18936-1] c 35 N83-29652
- DEGREES OF FREEDOM**  
Training vehicle for controlling attitude Patent  
[NASA-CASE-XMS-02977] c 11 N71-10746
- Dynamic vibration absorber Patent  
[NASA-CASE-LAR-10083-1] c 15 N71-27006
- Kinesthetic control simulator — for pilot training  
[NASA-CASE-LAR-10276-1] c 09 N75-15662
- DEHUMIDIFICATION**  
Condenser - Separator  
[NASA-CASE-XLA-08645] c 15 N69-21465
- DEHYDRATED FOOD**  
Modification of the physical properties of freeze-dried rice  
[NASA-CASE-MSC-13540-1] c 05 N72-33096
- DEHYDRATION**  
Process for developing crystallinity in linear aromatic polyimides  
[NASA-CASE-LAR-13732-1] c 27 N87-25474
- DEICERS**  
Piezoelectric deicing device  
[NASA-CASE-LEW-13773-2] c 33 N86-20671
- Electro-expulsive separation system  
[NASA-CASE-ARC-11613-1] c 33 N87-28833
- DEIONIZATION**  
Process for making a noble metal on tin oxide catalyst  
[NASA-CASE-LAR-13741-1-SB] c 25 N90-20180
- DELAMINATING**  
Method of inseting predesigned disbond areas into composite laminates  
[NASA-CASE-LAR-13225-1] c 24 N89-14258
- Delamination test apparatus and method  
[NASA-CASE-LAR-13985-1] c 24 N89-28586
- DELAY CIRCUITS**  
Pulsed differential comparator circuit Patent  
[NASA-CASE-XLE-03804] c 10 N71-19471
- Control apparatus for applying pulses of selectively predetermined duration to a sequence of loads Patent  
[NASA-CASE-XGS-04224] c 10 N71-26418
- Telemetry synchronizer  
[NASA-CASE-GSC-11868-1] c 17 N76-22245
- Swept group delay measurement  
[NASA-CASE-NPO-13909-1] c 33 N78-25319
- Pseudonoise code tracking loop  
[NASA-CASE-MSC-18035-1] c 32 N81-15179
- Long period pseudo random number sequence generator  
[NASA-CASE-NPO-17241-1-CU] c 33 N90-23636
- DELAY LINES**  
A solid state acoustic variable time delay line Patent  
[NASA-CASE-ERC-10032] c 10 N71-25900
- DELTA MODULATION**  
Multifunction audio digitizer — producing direct delta and pulse code modulation  
[NASA-CASE-MSC-13855-1] c 35 N74-17885
- DELTA WINGS**  
Variable-geometry winged reentry vehicle Patent  
[NASA-CASE-XLA-00241] c 31 N70-37986
- A two-stage earth-to-orbit transport with translating oblique wings for booster recovery  
[NASA-CASE-LAR-14156-1] c 16 N90-16781
- DEMAGNETIZATION**  
Tumbler system to provide random motion  
[NASA-CASE-XGS-02437] c 15 N69-21472
- DEMODULATION**  
Phase quadrature-plural channel data transmission system Patent  
[NASA-CASE-XAC-06302] c 08 N71-19763
- Facsimile video remodulation network  
[NASA-CASE-GSC-10185-1] c 07 N72-12081
- Quadrature demodulation  
[NASA-CASE-GSC-12137-1] c 33 N78-32338
- Navigation system and method  
[NASA-CASE-GSC-12508-1] c 04 N84-22546
- Digital carrier demodulator employing components working beyond normal limits  
[NASA-CASE-NPO-17628-1-CU] c 32 N89-28684
- Phase ambiguity resolution for offset QPSK modulation systems  
[NASA-CASE-NPO-17853-1-CU] c 32 N90-16975
- DEMODULATORS**  
Telemetry word forming unit  
[NASA-CASE-XNP-09225] c 09 N69-24333
- Frequency shift keyed demodulator Patent  
[NASA-CASE-XGS-02889] c 07 N71-11282
- Bi-carrier demodulator with modulation Patent  
[NASA-CASE-XMF-01160] c 07 N71-11298
- Demodulation system Patent  
[NASA-CASE-XAC-04030] c 10 N71-19472
- Laser calibrator Patent  
[NASA-CASE-XLA-03410] c 16 N71-25914
- Frequency modulation demodulator threshold extension device Patent  
[NASA-CASE-MSC-12165-1] c 07 N71-33696
- Full wave modulator-demodulator amplifier apparatus — for generating rectified output signal  
[NASA-CASE-FRC-10072-1] c 33 N74-14939
- Unbalanced quadrature demodulator  
[NASA-CASE-MSC-14840-1] c 32 N77-24331
- Digital demodulator-correlator  
[NASA-CASE-NPO-13982-1] c 32 N79-14267
- Self-calibrating threshold detector  
[NASA-CASE-MSC-16370-1] c 35 N81-19427
- Digital demodulator  
[NASA-CASE-LAR-12659-1] c 33 N82-26570
- DENDRITIC CRYSTALS**  
Method of increasing minority carrier lifetime in silicon web or the like  
[NASA-CASE-NPO-15530-1] c 76 N83-35888
- DENSIFICATION**  
Densification of porous refractory substrates — space shuttle orbiter tiles  
[NASA-CASE-MSC-18737-1] c 24 N83-13171
- DENSITOMETERS**  
Apparatus having coaxial capacitor structure for measuring fluid density Patent  
[NASA-CASE-XLE-00143] c 14 N70-36618
- Densitometer Patent  
[NASA-CASE-XLE-00688] c 14 N70-41330
- Ultrasonic bone densitometer  
[NASA-CASE-MFS-20994-1] c 35 N75-12271
- DENSITY (MASS/VOLUME)**  
Non-toxic invert analog glass compositions of high modulus  
[NASA-CASE-HQN-10328-2] c 27 N82-29454

- Method and apparatus for minimizing convection during crystal growth from solution  
[NASA-CASE-NPO-15811-1] c 76 N84-12968
- DENSITY DISTRIBUTION**  
Apparatus for increasing ion engine beam density Patent  
[NASA-CASE-XLE-00519] c 28 N70-41576  
Method and apparatus for compensating reflection losses in a path length modulated absorption-absorption trace gas detector — for determining density of gas  
[NASA-CASE-ARC-10631-1] c 74 N78-20958
- DENSITY MEASUREMENT**  
Apparatus having coaxial capacitor structure for measuring fluid density Patent  
[NASA-CASE-XLE-00143] c 14 N70-36618  
Densitometer Patent  
[NASA-CASE-XLE-00688] c 14 N70-41330  
Determining particle density using known material Hugoniot curves  
[NASA-CASE-LAR-11059-1] c 76 N75-12810  
Selective image area control of X-ray film exposure density  
[NASA-CASE-NPO-13808-1] c 35 N78-15461  
Geodetic distance measuring apparatus  
[NASA-CASE-GSC-12609-2] c 36 N83-29681  
Device for determining frost depth and density  
[NASA-CASE-MFS-25754-1] c 35 N84-28018
- DENTISTRY**  
Process for the preparation of brushite crystals  
[NASA-CASE-ERC-10338] c 04 N72-33072  
Acoustic tooth cleaner  
[NASA-CASE-LAR-12471-1] c 52 N82-29862
- DEOXIDIZING**  
Isotope exchange in oxide-containing catalyst  
[NASA-CASE-LAR-13542-2-SB] c 25 N90-20154
- DEOXYGENATION**  
Electrocatalyst for oxygen reduction  
[NASA-CASE-HQN-10537-1] c 06 N72-10138
- DEPLOYMENT**  
Minimech self-deploying boom mechanism  
[NASA-CASE-GSC-10568-1] c 15 N72-18477  
Deployable solar cell array  
[NASA-CASE-NPO-10883] c 31 N72-22874  
Antenna deployment mechanism for use with a spacecraft — extensible and retractable telescopic antenna mast  
[NASA-CASE-GSC-12331-1] c 18 N80-14183  
High acceleration cable deployment system  
[NASA-CASE-ARC-11256-1] c 15 N82-24272  
Sequentially deployable maneuverable tetrahedral beam  
[NASA-CASE-LAR-13098-1] c 31 N86-19479  
Joint for deployable structures  
[NASA-CASE-NPO-16038-1] c 37 N86-19605  
Latching mechanism for deployable/re-stowable columns useful in satellite construction  
[NASA-CASE-LAR-13169-1] c 37 N86-25791  
Payload deployment method and system  
[NASA-CASE-MSC-21330-1] c 16 N88-24660
- DEPOSITION**  
Means and methods of depositing thin films on substrates Patent  
[NASA-CASE-XNP-00595] c 15 N70-34967  
Monitoring deposition of films  
[NASA-CASE-MFS-20675] c 26 N73-26751  
Production of pure metals  
[NASA-CASE-LEW-10906-1] c 25 N74-30502  
Diamondlike flake composites  
[NASA-CASE-LEW-13837-1] c 24 N84-22695  
Deposition of diamondlike carbon films  
[NASA-CASE-LEW-14080-1] c 31 N85-20153  
Liquid crystal light valve structures  
[NASA-CASE-MSC-20036-1] c 78 N85-33826  
Method of coating a substrate with a rapidly solidified metal  
[NASA-CASE-GSC-12880-1] c 26 N86-32550
- DEPOSITS**  
Apparatus and method to keep the walls of a free-space reactor free from deposits of solid materials  
[NASA-CASE-NPO-15851-1] c 37 N85-21652
- DEPTH**  
Television monitor field shifter and an opto-electronic method for obtaining a stereo image of optimal depth resolution and reduced depth distortion on a single screen  
[NASA-CASE-NPO-17249-1-CU] c 32 N89-28676
- DEPTH MEASUREMENT**  
Device for determining frost depth and density  
[NASA-CASE-MFS-25754-1] c 35 N84-28018  
Mining volume measurement system  
[NASA-CASE-LAR-13519-1] c 35 N88-23963  
Ultrasonic depth gauge for liquids under high pressure  
[NASA-CASE-LAR-13300-1-CU] c 35 N89-14407  
Adjustable depth gage  
[NASA-CASE-LEW-14880-1] c 35 N90-10415
- DESCENT**  
Emergency descent device  
[NASA-CASE-MFS-23074-1] c 54 N77-21844
- DESIGN ANALYSIS**  
Airfoil shape for flight at subsonic speeds — design analysis and aerodynamic characteristics of the GAW-1 airfoil  
[NASA-CASE-LAR-10585-1] c 02 N76-22154  
Snap-in compressible biomedical electrode  
[NASA-CASE-MSC-14623-1] c 52 N77-28717
- DESORPTION**  
Multicomponent gas sorption Joule-Thomson refrigerator  
[NASA-CASE-NPO-17569-1-CU] c 31 N90-26176
- DESTRUCTIVE TESTS**  
Aeroelastic instability stoppers for wind tunnel models  
[NASA-CASE-LAR-12458-1] c 44 N83-21503
- DESULFURIZING**  
Coal desulfurization process  
[NASA-CASE-NPO-13937-1] c 44 N78-31527  
Continuous coal processing method  
[NASA-CASE-NPO-13758-2] c 31 N81-15154  
Coal desulfurization — using iron pentacarbonyl  
[NASA-CASE-NPO-14272-1] c 25 N81-33246  
Crude oil desulfurization  
[NASA-CASE-NPO-14542-1] c 25 N82-23282  
Coal desulfurization by aqueous chlorination  
[NASA-CASE-NPO-14902-1] c 25 N82-29371  
Hydrodesulfurization of chlorinated coal  
[NASA-CASE-NPO-15304-1] c 25 N83-31743  
Fluidized bed desulfurization  
[NASA-CASE-NPO-15924-1] c 25 N85-35253  
Regenerative Cu La zeolite supported desulfurizing sorbents  
[NASA-CASE-NPO-17480-1-CU] c 25 N90-26098
- DETECTION**  
Heated element fluid flow sensor Patent  
[NASA-CASE-MSC-12084-1] c 12 N71-17569  
Leak detector Patent  
[NASA-CASE-LAR-10323-1] c 12 N71-17573  
Metallic intrusion detector system  
[NASA-CASE-ARC-10265-1] c 10 N72-28240  
Cosmic dust or other similar outer space particles impact location detector  
[NASA-CASE-GSC-11291-1] c 25 N72-33696  
Bacteria detection instrument and method  
[NASA-CASE-GSC-11533-1] c 14 N73-13435  
Short range laser obstacle detector — for surface vehicles using laser diode array  
[NASA-CASE-NPO-11856-1] c 36 N74-15145  
Vacuum leak detector  
[NASA-CASE-LAR-11237-1] c 35 N75-19612  
Photoelectric detection system — manufacturing automation  
[NASA-CASE-MFS-23776-1] c 33 N82-28545  
Apparatus and process for microbial detection and enumeration  
[NASA-CASE-LAR-12709-1] c 35 N82-28604  
Focal plane array optical proximity sensor  
[NASA-CASE-NPO-15155-1] c 74 N85-22139  
Dual differential interferometer  
[NASA-CASE-LAR-12966-1] c 35 N85-30282  
Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NASA-CASE-NPO-15494-2] c 35 N85-34373  
Modulated voltage metastable ionization detector  
[NASA-CASE-ARC-11503-1] c 35 N85-34374  
Spillage detector for liquid chromatography systems  
[NASA-CASE-MSC-20026-1] c 25 N86-27431  
Dynamic range compression/expansion of light beams by photorefractive crystals  
[NASA-CASE-NPO-17140-1-CU] c 74 N89-14077  
Tailorable infrared sensing device with strain layer superlattice structure  
[NASA-CASE-NPO-16617-2-CU] c 35 N90-17118  
Device for quickly sensing the amount of O<sub>2</sub> in a combustion product gas  
[NASA-CASE-LAR-13816-1] c 35 N90-22025  
Pseudomonas diagnostic assay  
[NASA-CASE-NPO-17653-1-CU] c 51 N90-27239
- DETECTORS**  
Pressurized cell micrometeoroid detector Patent  
[NASA-CASE-XLA-00936] c 14 N71-14996  
Detector panels-micrometeoroid impact Patent  
[NASA-CASE-XLA-05906] c 31 N71-16221  
Pulse activated polarographic hydrogen detector Patent  
[NASA-CASE-XMF-06531] c 14 N71-17575  
Light position locating system Patent  
[NASA-CASE-XNP-01059] c 23 N71-21821  
Method for detecting leaks in hermetically sealed containers Patent  
[NASA-CASE-ERC-10045] c 15 N71-24910  
Precipitation detector Patent  
[NASA-CASE-XLA-02619] c 10 N71-26334
- Hydrogen fire blink detector  
[NASA-CASE-MFS-15063] c 14 N72-25412  
Combustion detector  
[NASA-CASE-LAR-10739-1] c 14 N73-16484  
Multiple pass reimaging optical system  
[NASA-CASE-ARC-10184-1] c 23 N73-20741  
Meteoroid detector  
[NASA-CASE-LAR-10483-1] c 14 N73-32327  
Deployable pressurized cell structure for a micrometeoroid detector  
[NASA-CASE-LAR-10295-1] c 35 N74-21062  
Modulated hydrogen ion flame detector  
[NASA-CASE-ARC-10322-1] c 35 N76-18403  
Coal-rock interface detector  
[NASA-CASE-MFS-23725-1] c 43 N79-31706  
Means and method for calibrating a photon detector utilizing electron-photon coincidence  
[NASA-CASE-NPO-15644-1] c 35 N84-33767
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Temperature compensated light source using a light emitting diode  
[NASA-CASE-ARC-10467-1] c 09 N73-14214

Wide temperature range electronic device with lead attachment  
[NASA-CASE-ERC-10224-2] c 09 N73-27150

High isolation RF signal selection switches  
[NASA-CASE-NPO-13081-1] c 33 N74-22814

Logarithmic circuit with wide dynamic range  
[NASA-CASE-GSC-12145-1] c 33 N78-32339

Regulated high efficiency, lightweight capacitor-diode multiplier dc to dc converter  
[NASA-CASE-LEW-12791-1] c 33 N78-32341

Thermal compensator for closed-cycle helium refrigerator — assuring constant temperature for an infrared laser diode  
[NASA-CASE-GSC-12168-1] c 31 N79-17029

Digital control of diode laser for atmospheric spectroscopy  
[NASA-CASE-NPO-16000-1] c 36 N85-29264

Arrangement for damping the resonance in a laser diode  
[NASA-CASE-NPO-15980-1] c 36 N85-30305

**DIPHENYL COMPOUNDS**

Poly(carbonate-mide) polymer  
[NASA-CASE-LAR-13292-1] c 27 N86-24841

Amine terminated bispartamide polymer  
[NASA-CASE-ARC-11421-2] c 27 N86-31726

Aminophenoxycyclophosphazene cured epoxy resins and the composites, laminates, adhesives and structures thereof  
[NASA-CASE-ARC-11548-1] c 27 N87-25469

**DIPOLE ANTENNAS**

Circularly polarized antenna  
[NASA-CASE-ERC-10214] c 09 N72-31235

Cavity-backed, micro-strip dipole antenna array  
[NASA-CASE-MSC-18606-1] c 32 N82-11336

**DIRECT CURRENT**

Regulated dc to dc converter  
[NASA-CASE-XGS-03429] c 03 N69-21330

Bus voltage compensation circuit for controlling direct current motor  
[NASA-CASE-XMS-04215-1] c 09 N69-39987

Thermionic diode switch Patent  
[NASA-CASE-NPO-10404] c 03 N71-12255

A dc-coupled noninverting one-shot Patent  
[NASA-CASE-XNP-09450] c 10 N71-18723

Stepping motor control circuit Patent  
[NASA-CASE-GSC-10366-1] c 10 N71-18772

Frequency control network for a current feedback oscillator Patent  
[NASA-CASE-GSC-10041-1] c 10 N71-19418

Self-repeating plasma generator having communicating annular and linear arc discharge passages Patent  
[NASA-CASE-XLA-03103] c 25 N71-21693

Positive dc to positive dc converter Patent  
[NASA-CASE-XMF-14301] c 09 N71-23188

Positive dc to negative dc converter Patent  
[NASA-CASE-XMF-08217] c 03 N71-23239

Blood pressure measuring system for separating and separately recording dc signal and an ac signal Patent  
[NASA-CASE-XMS-06061] c 05 N71-23317

Radio frequency coaxial high pass filter Patent  
[NASA-CASE-XGS-01418] c 09 N71-23573

Brushless direct current tachometer Patent  
[NASA-CASE-MFS-20385] c 09 N71-24904

Inverter with means for base current shaping for sweeping charge carriers from base region Patent  
[NASA-CASE-XGS-06226] c 10 N71-25950

Dual polarity full wave dc motor drive Patent  
[NASA-CASE-XNP-07477] c 09 N71-26092

A dc motor speed control system Patent  
[NASA-CASE-MFS-14610] c 09 N71-28886

Cyclic switch Patent  
[NASA-CASE-LEW-10155-1] c 09 N71-29035

Load insensitive electrical device  
[NASA-CASE-XER-11046] c 09 N72-22203

A dc to ac to dc converter having transistor synchronous rectifiers  
[NASA-CASE-GSC-11128-1] c 09 N72-25253

Electric motive machine including magnetic bearing  
[NASA-CASE-XGS-07805] c 15 N72-33476

Powerplexer  
[NASA-CASE-MSC-12396-1] c 03 N73-31988

Bio-isolated dc operational amplifier — for bioelectric measurements  
[NASA-CASE-ARC-10596-1] c 33 N74-21851

Load insensitive electrical device — power converters for supplying direct current at one voltage from a source at another voltage  
[NASA-CASE-XER-11046-2] c 33 N74-22864

Differential pulse code modulation  
[NASA-CASE-MSC-12506-1] c 32 N77-12239

Three phase full wave dc motor decoder  
[NASA-CASE-GSC-11824-1] c 33 N77-26386

Time domain phase measuring apparatus  
[NASA-CASE-GSC-12228-1] c 33 N79-10338

Direct current transformer  
[NASA-CASE-MFS-23659-1] c 33 N79-17133

Elimination of current spikes in buck power converters  
[NASA-CASE-NPO-14505-1] c 33 N81-19393

Controller for computer control of brushless dc motors — automobile engines  
[NASA-CASE-NPO-13970-1] c 33 N81-20352

Direct current ballast circuit for metal halide lamp  
[NASA-CASE-MSC-18407-1] c 33 N82-24427

Brushless DC motor control system responsive to control signals generated by a computer or the like  
[NASA-CASE-NPO-18420-1] c 33 N86-20681

Four quadrant control circuit for a brushless three-phase dc motor  
[NASA-CASE-MFS-28080-1] c 33 N87-21233

Arjet power supply and start circuit  
[NASA-CASE-LEW-14374-1] c 09 N88-28939

**DIRECT LIFT CONTROLS**  
Velocity vector control system augmented with direct lift control  
[NASA-CASE-LAR-12268-1] c 08 N81-24106

**DIRECT POWER GENERATORS**  
Energy conversion apparatus Patent  
[NASA-CASE-XLE-00212] c 03 N70-34134

Thermal pump-compressor for space use Patent  
[NASA-CASE-XLA-00377] c 33 N71-17610

Positive dc to negative dc converter Patent  
[NASA-CASE-XMF-08217] c 03 N71-23239

Unsaturating saturable core transformer Patent  
[NASA-CASE-ERC-10125] c 09 N71-24893

Load insensitive electrical device — power converters for supplying direct current at one voltage from a source at another voltage  
[NASA-CASE-XER-11046-2] c 33 N74-22864

Bidirectional control system for energy flow in solar powered flywheel  
[NASA-CASE-MFS-25978-1] c 44 N87-21410

**DIRECTIONAL ANTENNAS**  
Mechanical coordinate converter Patent  
[NASA-CASE-XNP-00614] c 14 N70-36907

Weatherproof helix antenna Patent  
[NASA-CASE-XKS-08485] c 07 N71-19493

Tracking antenna system Patent  
[NASA-CASE-GSC-10553-1] c 07 N71-19854

Reversible motion drive system Patent  
[NASA-CASE-NPO-10173] c 15 N71-24696

Variable beamwidth antenna — with multiple beam, variable feed system  
[NASA-CASE-GSC-11862-1] c 32 N76-18295

Suspension system for a wheel rolling on a flat track — bearings for directional antennas  
[NASA-CASE-NPO-14395-1] c 37 N82-21587

**DIRECTIONAL CONTROL**  
Gimballed, partially submerged rocket nozzle Patent  
[NASA-CASE-XMF-01544] c 28 N70-34162

Omnidirectional wheel  
[NASA-CASE-MFS-21309-1] c 37 N74-18125

Velocity vector control system augmented with direct lift control  
[NASA-CASE-LAR-12268-1] c 08 N81-24106

Magnetic heading reference  
[NASA-CASE-LAR-12638-1] c 04 N84-14132

**DIRECTIONAL SOLIDIFICATION (CRYSTALS)**  
Preparation of monotelectic alloys having a controlled microstructure by directional solidification under dopant-induced interface breakdown  
[NASA-CASE-MFS-23816-1] c 26 N80-23419

High gradient directional solidification furnace  
[NASA-CASE-MFS-25963-1] c 35 N86-20750

Directional solidification of superalloys  
[NASA-CASE-MFS-28314-1] c 26 N90-15227

**DIRECTIONAL STABILITY**  
Nose gear steering system for vehicle with main skids Patent  
[NASA-CASE-XLA-01804] c 02 N70-34160

System for imposing directional stability on a rocket-propelled vehicle  
[NASA-CASE-MFS-21311-1] c 20 N76-21275

**DIRECTIVITY**  
Multiprism collimator  
[NASA-CASE-GSC-12608-1] c 74 N83-10900

**DISCONNECT DEVICES**  
Gas actuated bolt disconnect Patent  
[NASA-CASE-XLA-00326] c 03 N70-34667

Umbilical disconnect Patent  
[NASA-CASE-XLA-00711] c 03 N71-12258

Remote controlled tubular disconnect Patent  
[NASA-CASE-XLA-01396] c 03 N71-12259

Quick release connector Patent  
[NASA-CASE-XLA-01141] c 15 N71-13789

Split nut separation system Patent  
[NASA-CASE-XNP-06914] c 15 N71-21489

Separation simulator Patent  
[NASA-CASE-XKS-04631] c 10 N71-23663

Duct coupling for single-handed operation Patent  
[NASA-CASE-MFS-20395] c 15 N71-24903

Breakaway connector  
[NASA-CASE-NPO-11140] c 15 N72-17455

Torsional disconnect unit  
[NASA-CASE-NPO-10704] c 15 N72-20445

Frangible link  
[NASA-CASE-MSC-11849-1] c 15 N72-22488

Quick disconnect coupling  
[NASA-CASE-NPO-11202] c 15 N72-25450

Quick disconnect filter coupling  
[NASA-CASE-MFS-22323-1] c 37 N76-14463

Positive isolation disconnect  
[NASA-CASE-MSC-16043-1] c 37 N79-11402

Space probe/satellite ejection apparatus for spacecraft  
[NASA-CASE-MFS-15429-1] c 18 N84-22609

Slide release mechanism — for space shuttle orbiter/external tank connection device  
[NASA-CASE-MSC-20080-1] c 37 N85-30334

Space probe/satellite ejection apparatus for spacecraft  
[NASA-CASE-MFS-25429-1] c 18 N86-20469

Self-locking double retention redundant full pin release  
[NASA-CASE-NPO-16233-1] c 37 N86-20801

Preloadable vector sensitive latch  
[NASA-CASE-MSC-20910-1] c 37 N87-25582

Toggle release  
[NASA-CASE-MSC-21354-1] c 37 N88-24969

**DISCONTINUITY**  
Strain coupled servo control system Patent  
[NASA-CASE-XLA-08530] c 32 N71-25360

**DISCRIMINATORS**  
Phase detector assembly Patent  
[NASA-CASE-XMF-00701] c 09 N70-40272

Difference circuit Patent  
[NASA-CASE-XNP-08274] c 10 N71-13537

Digital frequency discriminator Patent  
[NASA-CASE-MFS-14322] c 08 N71-18692

Comparator for the comparison of two binary numbers Patent  
[NASA-CASE-XNP-04819] c 08 N71-23295

Diode-quad bridge circuit means  
[NASA-CASE-ARC-10384-3] c 33 N75-19520

Diode-quad bridge circuit means  
[NASA-CASE-ARC-10384-2] c 33 N75-25041

Discriminator aided phase lock acquisition for suppressed carrier signals  
[NASA-CASE-NPO-14311-1] c 33 N82-29539

**DISKS**  
Hybrid butterfly valve  
[NASA-CASE-SSC-00004] c 37 N90-15443

**DISPENSERS**  
Liquid aerosol dispenser  
[NASA-CASE-MFS-20829] c 12 N72-21310

Potable water dispenser  
[NASA-CASE-MFS-21115-1] c 54 N74-12779

Lyophilized spore dispenser  
[NASA-CASE-LAR-10544-1] c 37 N74-13178

Metering gun for dispensing precisely measured charges of fluid  
[NASA-CASE-MFS-21163-1] c 54 N74-17853

Automatic fluid dispenser  
[NASA-CASE-ARC-10820-1] c 35 N78-19466

Method of dispensing reagent chemicals in space  
[NASA-CASE-LAR-13607-1-CU] c 29 N88-29048

**DISPERSING**  
Shock tube powder dispersing apparatus Patent  
[NASA-CASE-XLE-04946] c 17 N71-24911

Powder fed sheared dispersal particle generator  
[NASA-CASE-LAR-12785-1] c 37 N84-16561

**DISPERSIONS**  
Preparation of alkali metal dispersions  
[NASA-CASE-NPO-08876] c 17 N73-28573

**DISPLACEMENT**  
Bimetallic fluid displacement apparatus — for stirring and heating stored gases and liquids  
[NASA-CASE-ARC-10441-1] c 35 N74-15126

Polymidazoles via aromatic nucleophilic displacement  
[NASA-CASE-LAR-14145-1] c 27 N80-26954

**DISPLACEMENT MEASUREMENT**  
Null-type vacuum microbalance Patent  
[NASA-CASE-XAC-00472] c 15 N70-40180

Self-calibrating displacement transducer Patent  
[NASA-CASE-XLA-00781] c 09 N71-22999

Angular displacement indicating gas bearing support system Patent  
[NASA-CASE-XLA-09346] c 15 N71-28740

Apparatus for remote measurement of displacement of marks on a specimen undergoing a tensile test  
[NASA-CASE-NPO-10778] c 14 N72-11364

Miniature muscle displacement transducer  
[NASA-CASE-NPO-13519-1] c 33 N76-19338

Simultaneous muscle force and displacement transducer  
[NASA-CASE-NPO-14212-1] c 52 N80-27072

Device for measuring hole elongation in a bolted joint  
[NASA-CASE-LAR-13453-1] c 37 N88-14361

**DISPLAY DEVICES**  
Integrated time shared instrumentation display Patent  
[NASA-CASE-XLA-01952] c 08 N71-12507

Energy management system for glider type vehicle Patent  
[NASA-CASE-XFR-00756] c 02 N71-13421

Fluidic-thermochromic display device Patent  
[NASA-CASE-ERC-10031] c 12 N71-18603

Display for binary characters Patent  
[NASA-CASE-XGS-04987] c 08 N71-20571

Optical projector system Patent  
[NASA-CASE-XNP-03853] c 23 N71-21882

Optical monitor panel Patent  
[NASA-CASE-XKS-03509] c 14 N71-23175

BCD to decimal decoder Patent  
[NASA-CASE-XKS-06167] c 08 N71-24890

Noninterruptible digital counting system Patent  
[NASA-CASE-XNP-09759] c 08 N71-24891

Analog signal integration and reconstruction system Patent  
[NASA-CASE-NPO-10344] c 10 N71-26544

Plasma fluidic hybrid display Patent  
[NASA-CASE-ERC-10100] c 09 N71-33519

System for quantizing graphic displays  
[NASA-CASE-NPO-10745] c 08 N72-22164

Digital video display system using cathode ray tube  
[NASA-CASE-NPO-11342] c 09 N72-25248

Scientific experiment flexible mount  
[NASA-CASE-MSC-12372-1] c 31 N72-25842

Display system  
[NASA-CASE-ERC-10350] c 14 N73-20474

Transparent switchboard  
[NASA-CASE-MSC-13746-1] c 10 N73-32143

Recorder/processor apparatus — for optical data processing  
[NASA-CASE-GSC-11553-1] c 35 N74-15831

Rotating raster generator  
[NASA-CASE-FRC-10071-1] c 32 N74-20813

X-Y alphanumeric character generator for oscilloscopes  
[NASA-CASE-GSC-11582-1] c 33 N75-19517

Binocular device for displaying numerical information in field of view  
[NASA-CASE-LAR-11782-1] c 74 N77-20882

Particle parameter analyzing system — x-y plotter circuits and display  
[NASA-CASE-XLE-06094] c 33 N78-17293

- Projection system for display of parallax and perspective  
[NASA-CASE-MFS-23194-1] c 35 N78-17357
- Full color hybrid display for aircraft simulators — landing aids  
[NASA-CASE-ARC-10903-1] c 09 N78-18083
- Miniature implantable ultrasonic echosonometer  
[NASA-CASE-ARC-11035-1] c 52 N79-18580
- System and method for obtaining wide screen Schlieren photographs  
[NASA-CASE-NPO-14174-1] c 74 N79-20856
- Chromatically corrected virtual image visual display — reducing eye strain in flight simulators  
[NASA-CASE-LAR-12251-1] c 74 N80-27185
- System for displaying at a remote station data generated at a central station and for powering the remote station from the central station  
[NASA-CASE-GSC-12411-1] c 33 N81-14221
- System for providing an integrated display of instantaneous information relative to aircraft attitude, heading, altitude, and horizontal situation  
[NASA-CASE-FRC-11005-1] c 06 N82-16075
- Environmental fog/rain visual display system for aircraft simulators  
[NASA-CASE-ARC-11158-1] c 09 N82-24212
- Synchronized voltage contrast display analysis system  
[NASA-CASE-NPO-14567-1] c 33 N83-18996
- Real-time 3-D X-ray and gamma-ray viewer  
[NASA-CASE-GSC-12640-1] c 74 N84-11920
- Retinally stabilized differential resolution television display  
[NASA-CASE-NPO-15432-1] c 32 N85-29117
- Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NASA 1.71:NPO-15494-2] c 35 N85-34373
- Aircraft lifter  
[NASA-CASE-LAR-12518-1] c 06 N86-27280
- Simulator scene display evaluation device  
[NASA-CASE-ARC-11504-1] c 09 N86-32447
- Large TV display system  
[NASA-CASE-NPO-16932-1CU] c 33 N87-15413
- Aircraft control position indicator  
[NASA-CASE-LAR-12984-1] c 06 N87-22678
- Flat-panel, full-color, electroluminescent display  
[NASA-CASE-LAR-13407-1] c 33 N87-28831
- Braille reading system  
[NASA-CASE-LAR-13306-1] c 82 N87-29372
- Method and system for monitoring and displaying engine performance parameters  
[NASA-CASE-LAR-14049-1] c 07 N89-23466
- DISSIPATION**  
Voltage regulator with plural parallel power source sections Patent  
[NASA-CASE-GSC-10891-1] c 10 N71-26626
- Warm fog dissipation using large volume water sprays  
[NASA-CASE-MFS-25962-1] c 09 N89-25242
- DISSOCIATION**  
Solar hydrogen generator  
[NASA-CASE-LAR-11361-1] c 44 N77-22607
- DISSOLVING**  
Zero gravity liquid mixer  
[NASA-CASE-LAR-10195-1] c 15 N73-19458
- DISTANCE MEASURING EQUIPMENT**  
Binary coded sequential acquisition ranging system  
[NASA-CASE-NPO-11184] c 08 N72-25209
- Determining distance to lightning strokes from a single station  
[NASA-CASE-KSC-10698] c 07 N73-20175
- Terminal guidance sensor system — space shuttle coupling to orbiting satellites  
[NASA-CASE-NPO-14521-1] c 37 N81-27519
- Geodetic distance measuring apparatus  
[NASA-CASE-GSC-12609-2] c 36 N83-29681
- Rotary target V-block  
[NASA-CASE-LAR-12007-3] c 35 N84-16523
- Method and apparatus for measuring distance  
[NASA-CASE-MSC-20912-1] c 32 N88-26568
- Adjustable depth gage  
[NASA-CASE-LEW-14880-1] c 35 N90-10415
- DISTILLATION EQUIPMENT**  
Compact solar still Patent  
[NASA-CASE-XMS-04533] c 15 N71-23086
- Method and apparatus for distillation of liquids Patent  
[NASA-CASE-XNP-08124] c 15 N71-27184
- Method for distillation of liquids  
[NASA-CASE-XNP-08124-2] c 06 N73-13129
- DISTRIBUTED AMPLIFIERS**  
Cascaded complementary pair broadband transistor amplifiers Patent  
[NASA-CASE-NPO-10003] c 10 N71-26415
- DISTRIBUTED PROCESSING**  
Distributed multiport memory architecture  
[NASA-CASE-NPO-15342-1] c 60 N83-32342
- A method of up-front load balancing for local memory parallel processors  
[NASA-CASE-MSC-21348-1] c 62 N89-24084
- Dynamic resource allocation scheme for distributed heterogeneous computer systems  
[NASA-CASE-NPO-17187-1CU] c 62 N89-29976
- Real-time simulation clock  
[NASA-CASE-LAR-14056-1] c 35 N90-23713
- DISTRIBUTION (PROPERTY)**  
Thermionic energy converters  
[NASA-CASE-LEW-12443-1] c 44 N83-32175
- DISTRIBUTORS**  
High voltage distributor  
[NASA-CASE-GSC-11849-1] c 33 N76-16332
- DIVERGENT NOZZLES**  
Jet exhaust noise suppressor  
[NASA-CASE-LEW-11268-1] c 07 N74-27490
- DIVERTERS**  
Flow diverter valve and flow diversion method  
[NASA-CASE-HON-00573-1] c 37 N79-33468
- DIVIDERS**  
A synchronous binary array divider  
[NASA-CASE-ERC-10180-1] c 60 N74-20836
- DOCUMENT STORAGE**  
File card marker Patent  
[NASA-CASE-XLA-02705] c 08 N71-15908
- DOMES (STRUCTURAL FORMS)**  
Airborne tracking sunphotometer apparatus and system  
[NASA-CASE-ARC-11622-1] c 44 N88-14492
- DOORS**  
Emergency escape system Patent  
[NASA-CASE-MSC-12086-1] c 05 N71-12345
- CAM controlled retractable door latch  
[NASA-CASE-MSC-20304-1] c 37 N82-31690
- DOPES**  
Lithium counterdoped silicon solar cell  
[NASA-CASE-LEW-14177-1] c 44 N86-32875
- DOPPLER EFFECT**  
Doppler frequency spread correction device for multiplex transmissions  
[NASA-CASE-XGS-02749] c 07 N69-39978
- Laser Doppler system for measuring three dimensional vector velocity Patent  
[NASA-CASE-MFS-20386] c 21 N71-19212
- Doppler compensation by shifting transmitted object frequency within limits  
[NASA-CASE-GSC-10087-4] c 07 N73-20174
- Doppler shift system — system for measuring velocities of radiating particles  
[NASA-CASE-HON-10740-1] c 72 N74-19310
- Method and apparatus for Doppler frequency modulation of radiation  
[NASA-CASE-NPO-14524-1] c 32 N80-24510
- Servomechanism for Doppler shift compensation in optical correlator for synthetic aperture radar  
[NASA-CASE-NPO-14998-1] c 32 N83-18975
- Vibration-free Raman Doppler velocimeter  
[NASA-CASE-LAR-13268-1] c 35 N87-14669
- Doppler-corrected differential detection system  
[NASA-CASE-NPO-16987-1CU] c 32 N88-30001
- Efficient detection and signal parameter estimation with application to high dynamic GPS receiver  
[NASA-CASE-NPO-17820-1CU] c 04 N90-18379
- DOPPLER RADAR**  
Cooperative Doppler radar system Patent  
[NASA-CASE-LAR-10403] c 21 N71-11766
- Doppler radar having phase modulation of both transmitted and reflected return signals  
[NASA-CASE-MSC-18675-1] c 32 N84-22820
- Doppler radar with multiphase modulation of transmitted and reflected signal  
[NASA-CASE-MSC-18808-1] c 32 N90-20280
- DOSIMETERS**  
Dosimeter for high levels of absorbed radiation Patent  
[NASA-CASE-XLA-03645] c 14 N71-20430
- Miniature spectrally selective dosimeter  
[NASA-CASE-LAR-12469-1] c 35 N83-21311
- DOWNLINKING**  
VLSI single-chip (255,223) Reed-Solomon encoder with interleaver  
[NASA-CASE-NPO-17280-1CU] c 17 N90-21061
- DRAG CHUTES**  
Flexible wing deployment device Patent  
[NASA-CASE-XLA-01220] c 02 N70-41863
- Lightweight, variable solidity knitted parachute fabric — for aerodynamic decelerators  
[NASA-CASE-LAR-10776-1] c 02 N74-10034
- Extended moment arm anti-spin device  
[NASA-CASE-LAR-12979-1] c 05 N85-21147
- DRAG MEASUREMENT**  
Air frame drag balance Patent  
[NASA-CASE-XLA-00113] c 14 N70-33386
- Minimum induced drag airfoil body Patent  
[NASA-CASE-XLA-00755] c 01 N71-13410
- Minimum induced drag airfoil body Patent  
[NASA-CASE-XLA-05828] c 01 N71-13411
- Impact energy absorber Patent  
[NASA-CASE-XLA-01530] c 14 N71-23092
- System for use in conducting wake investigation for a wing in flight — differential pressure measurements for drag investigations  
[NASA-CASE-FRC-11024-1] c 02 N80-28300
- Skin friction measuring device for aircraft  
[NASA-CASE-FRC-11029-1] c 06 N81-17057
- DRAG REDUCTION**  
Propeller blade loading control Patent  
[NASA-CASE-XAC-00139] c 02 N70-34856
- Aircraft wheel spray drag alleviator Patent  
[NASA-CASE-XLA-01583] c 02 N70-36825
- Low-drag ground vehicle particularly suited for use in safely transporting livestock  
[NASA-CASE-FRC-11058-1] c 85 N82-33288
- Wingtip vortex propeller  
[NASA-CASE-LAR-13019-1] c 07 N85-35194
- Active control of boundary layer transition and turbulence  
[NASA-CASE-LAR-13532-1] c 34 N86-26575
- Combined riblet and lebu drag reduction system  
[NASA-CASE-LAR-13286-1] c 02 N88-14071
- Passive venting technique for shallow cavities  
[NASA-CASE-LAR-13875-1] c 05 N89-14233
- A two-stage earth-to-orbit transport with translating oblique wings for booster recovery  
[NASA-CASE-LAR-14156-1] c 16 N90-16781
- Compression pylon  
[NASA-CASE-LAR-13777-1] c 05 N90-20078
- Passive venting technique for shallow cavities  
[NASA-CASE-LAR-14031-1] c 05 N90-20079
- DRIFT (INSTRUMENTATION)**  
Amplifier drift tester  
[NASA-CASE-XMS-05562-1] c 09 N69-39986
- Radiation direction detector including means for compensating for photocell aging Patent  
[NASA-CASE-XLA-00183] c 14 N70-40239
- Failure detection and control means for improved drift performance of a gimbaled platform system  
[NASA-CASE-MFS-23551-1] c 04 N76-26175
- DRILL BITS**  
Sample collecting impact bit Patent  
[NASA-CASE-XNP-01412] c 15 N70-42034
- Hole cutter — drill bits and rotating shaft  
[NASA-CASE-MFS-22649-1] c 37 N75-25186
- DRILLING**  
Method for milling and drilling glass  
[NASA-CASE-GSC-12636-1] c 31 N83-27058
- Method for machining holes in composite materials  
[NASA-CASE-MFS-28044-1] c 31 N87-25491
- Adjustable depth gage  
[NASA-CASE-LEW-14880-1] c 35 N90-10415
- DRILLS**  
Rock drill for recovering samples  
[NASA-CASE-XNP-07478] c 14 N69-21823
- Soil penetrometer  
[NASA-CASE-XNP-05530] c 14 N73-32321
- DRIVES**  
Transistor drive regulator Patent  
[NASA-CASE-LEW-10233] c 10 N71-27126
- DROP TOWERS**  
Method of forming frozen spheres in a force-free drop tower  
[NASA-CASE-NPO-14845-1] c 27 N82-28442
- Sphere forming method and apparatus  
[NASA-CASE-NPO-15070-1] c 31 N83-35176
- DROPS (LIQUIDS)**  
Droplet monitoring probe  
[NASA-CASE-NPO-10985] c 14 N73-20478
- Method of evaporation  
[NASA-CASE-NPO-15609-2] c 25 N88-23846
- Hanging drop crystal growth apparatus and method  
[NASA-CASE-MFS-28206-1-SB] c 76 N90-23242
- Crystal growth apparatus  
[NASA-CASE-MFS-28182-1] c 76 N90-24169
- DRUGS**  
Automated analysis of oxidative metabolites  
[NASA-CASE-ARC-10469-1] c 25 N75-12086
- Human serum albumin crystals and method of preparation  
[NASA-CASE-MFS-28234-1] c 52 N90-20616
- DRY HEAT**  
Pressurized bellows flat contact heat exchanger interface  
[NASA-CASE-MSC-21271-1] c 34 N90-21999
- DRYING**  
Drying apparatus for photographic sheet material  
[NASA-CASE-GSC-11074-1] c 14 N73-28489
- Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NASA-CASE-NPO-15494-1] c 35 N82-25484
- Process for making a noble metal on tin oxide catalyst  
[NASA-CASE-LAR-13741-1-SB] c 25 N90-20180



**DRYING APPARATUS**

Gas purged dry box glove Patent  
[NASA-CASE-XLE-02531] c 05 N71-23080

**DUCTED FANS**

Cam-operated pitch-change apparatus  
[NASA-CASE-LEW-13050-1] c 07 N79-14095

**DUCTILITY**

Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-3] c 37 N82-19540

**DUCTS**

Duct coupling for single-handed operation Patent  
[NASA-CASE-MFS-20395] c 15 N71-24903  
Externally supported internally stabilized flexible duct joint  
[NASA-CASE-MFS-19194-1] c 37 N76-14460  
Apparatus for supplying conditioned air at a substantially constant temperature and humidity  
[NASA-CASE-GSC-12191-1] c 31 N80-32583  
Multi-path peristaltic pump  
[NASA-CASE-MSC-20907-1] c 37 N87-18818  
Vortex motion phase separator for zero gravity liquid transfer  
[NASA-CASE-KSC-11387-1] c 29 N90-20236

**DURABILITY**

Belt for transmitting power from a cogged driving member to a cogged driven member  
[NASA-CASE-GSC-12289-1] c 37 N80-32717

**DUST COLLECTORS**

Disk pack cleaning table Patent Application  
[NASA-CASE-LAR-10590-1] c 15 N70-26819  
Acoustic agglomeration methods and apparatus  
[NASA-CASE-NPO-15466-1] c 71 N85-22104

**DYE LASERS**

Infrared tunable laser  
[NASA-CASE-ARC-10463-1] c 09 N73-32111  
Laser head for simultaneous optical pumping of several dye lasers — with single flash lamp  
[NASA-CASE-LAR-11341-1] c 36 N75-19655

**DYES**

Dye penetrant for surfaces subsequently contacted by liquid oxygen Patent  
[NASA-CASE-XMF-02221] c 18 N71-27170  
Method for retarding dye fading during archival storage of developed color photographic film — inert atmosphere  
[NASA-CASE-MFS-23250-1] c 35 N82-11432

**DYNAMIC CHARACTERISTICS**

Dynamic sensor Patent  
[NASA-CASE-XAC-02877] c 14 N70-41681  
Alignment apparatus using a laser having a gravitationally sensitive cavity reflector  
[NASA-CASE-ARC-10444-1] c 16 N73-33397  
Apparatus for and method of compensating dynamic unbalance  
[NASA-CASE-GSC-12550-1] c 37 N84-28082

**DYNAMIC CONTROL**

Motion restraining device  
[NASA-CASE-NPO-13619-1] c 37 N78-16369  
System for controlled acoustic rotation of objects  
[NASA-CASE-NPO-15522-1] c 71 N83-32516

**DYNAMIC LOADS**

Multilegged support system Patent  
[NASA-CASE-XLA-01326] c 11 N71-21481  
Tension measurement device Patent  
[NASA-CASE-XMS-04545] c 15 N71-22878  
Impact monitoring apparatus  
[NASA-CASE-MSC-15626-1] c 14 N72-25411  
Ultrasonic method and apparatus for determining crack opening load  
[NASA-CASE-LAR-13889-1] c 39 N88-30160

**DYNAMIC MODELS**

Robust high-performance control for robotic manipulators  
[NASA-CASE-NPO-17785-1-CU] c 37 N89-28846  
Method and apparatus for configuration control of redundant robots  
[NASA-CASE-NPO-17801-1-CU] c 37 N90-27110

**DYNAMIC MODULUS OF ELASTICITY**

Apparatus for positioning and loading a test specimen Patent  
[NASA-CASE-XLE-01300] c 15 N70-41993

**DYNAMIC RESPONSE**

Impact simulator Patent  
[NASA-CASE-XLA-00493] c 11 N70-34786  
Instrument for measuring the dynamic behavior of liquids Patent  
[NASA-CASE-XLA-05541] c 12 N71-26387  
Response analyzers for sensors Patent  
[NASA-CASE-MFS-11204] c 14 N71-29134  
Cam-operated pitch-change apparatus  
[NASA-CASE-LEW-13050-1] c 07 N79-14095

**DYNAMIC STRUCTURAL ANALYSIS**

Method and apparatus for measuring the damping characteristics of a structure  
[NASA-CASE-ARC-10154-1] c 14 N72-22440

**DYNAMIC TESTS**

Support apparatus for dynamic testing Patent  
[NASA-CASE-XMF-01772] c 11 N70-41677  
Hydraulic support for dynamic testing Patent  
[NASA-CASE-XMF-03248] c 11 N71-10604

**DYNAMICAL SYSTEMS**

Method of forming dynamic membrane on stainless steel support  
[NASA-CASE-MSC-18172-3] c 31 N88-29052  
Dynamic range compression/expansion of light beams by photorefractive crystals  
[NASA-CASE-NPO-17140-1-CU] c 74 N89-14077

**DYNAMOMETERS**

Thrust dynamometer Patent  
[NASA-CASE-XLE-00702] c 14 N70-40203  
Thrust dynamometer Patent  
[NASA-CASE-XLE-05260] c 14 N71-20429

**E**

**EAR**

Method and apparatus for continuously monitoring blood oxygenation, blood pressure, pulse rate and the pressure pulse curve utilizing an ear oximeter as transducer Patent  
[NASA-CASE-XAC-05422] c 04 N71-23185

**EARPHONES**

Multi-adjustable headband — for headsets  
[NASA-CASE-KSC-11322-1] c 54 N89-29953

**EARTH ATMOSPHERE**

Ablation sensor Patent  
[NASA-CASE-XLA-01791] c 14 N71-22991

**EARTH CRUST**

Seismic vibration source  
[NASA-CASE-NPO-14112-1] c 46 N79-22679

**EARTH IONOSPHERE**

Ionospheric battery Patent  
[NASA-CASE-XGS-01593] c 03 N70-35408

**EARTH ORBITS**

High temperature furnace for melting materials in space  
[NASA-CASE-MFS-20710] c 11 N72-23215  
A method of delivering a vehicle to earth orbit and returning the reusable portion thereof to earth  
[NASA-CASE-MSC-12391] c 30 N73-12884  
A two-stage earth-to-orbit transport with translating oblique wings for booster recovery  
[NASA-CASE-LAR-14156-1] c 16 N90-16781

**ECCENTRICS**

Hot gas engine with dual crankshafts  
[NASA-CASE-NPO-14221-1] c 37 N81-25370

**ECHELLE GRATINGS**

Cooled echelle grating spectrometer — for space telescope applications  
[NASA-CASE-NPO-14372-1] c 35 N80-26635

**ECHO SOUNDING**

Ultrasonic depth gauge for liquids under high pressure  
[NASA-CASE-LAR-13300-1-CU] c 35 N89-14407

**ECHOES**

Miniature implantable ultrasonic echosonometer  
[NASA-CASE-ARC-11035-1] c 52 N79-18580  
Echo tracker/range finder for radars and sonars  
[NASA-CASE-NPO-14361-1] c 32 N82-23376

**EDDY CURRENTS**

Apparatus and method for inspecting a bearing ball  
[NASA-CASE-MFS-25833-1] c 35 N86-32698

**EDGES**

Method of forming a sharp edge on an optical device  
[NASA-CASE-GSC-12348-1] c 74 N80-24149

**EDITING**

Generation of animation sequences of three dimensional models  
[NASA-CASE-MSC-21379-1-SB] c 61 N90-27340

**EDUCATION**

Visual accommodation trainer-tester  
[NASA-CASE-ARC-11426-2] c 52 N89-16256

**EFFICIENCY**

Recovery of radiation damaged solar cells through thermal annealing  
[NASA-CASE-XGS-04047-2] c 03 N72-11062  
High efficiency multifrequency feed  
[NASA-CASE-GSC-11909] c 32 N74-20863

**EFFLUENTS**

Vortex generator for controlling the dispersion of effluents in a flowing liquid  
[NASA-CASE-LAR-12045-1] c 34 N77-24423  
Fluid sample collection and distribution system — qualitative analysis of aqueous samples from several points  
[NASA-CASE-MSC-16841-1] c 34 N79-24285

**EGRESS**

Explosively activated egress area  
[NASA-CASE-LAR-12624-1] c 01 N83-35992  
Emergency egress fixed rocket package  
[NASA-CASE-MSC-21332-1] c 03 N89-11724

**EJECTION**

Apparatus for ejection of an instrument cover  
[NASA-CASE-XMF-04132] c 15 N69-27502

**EJECTION SEATS**

Device for separating occupant from an ejection seat Patent  
[NASA-CASE-XMS-04625] c 05 N71-20718

**EJECTORS**

Ejection unit Patent  
[NASA-CASE-XNP-00676] c 15 N70-38996  
Device for separating occupant from an ejection seat Patent  
[NASA-CASE-XMS-04625] c 05 N71-20718  
Latch/ejector unit Patent  
[NASA-CASE-XLA-03538] c 15 N71-24897  
Space probe/satellite ejection apparatus for spacecraft  
[NASA-CASE-MFS-15429-1] c 18 N84-22609  
Diffuser/ejector system for a very high vacuum environment  
[NASA-CASE-MFS-25791-1] c 09 N84-27749  
Space probe/satellite ejection apparatus for spacecraft  
[NASA-CASE-MFS-25429-1] c 18 N86-20469

**ELASTIC BODIES**

Belleville spring assembly with elastic guides  
[NASA-CASE-XNP-09452] c 15 N69-27504  
Means for suppressing or attenuating bending motion of elastic bodies Patent  
[NASA-CASE-XAC-05632] c 32 N71-23971  
Device for measuring tensile forces  
[NASA-CASE-MFS-21728-1] c 35 N74-27865

**ELASTIC DEFORMATION**

Instrument for measuring torsional creep and recovery Patent  
[NASA-CASE-XLE-01481] c 14 N71-10781  
Means for suppressing or attenuating bending motion of elastic bodies Patent  
[NASA-CASE-XAC-05632] c 32 N71-23971

**ELASTIC MEDIA**

Miniature vibration isolator Patent  
[NASA-CASE-XLA-01019] c 15 N70-40156

**ELASTIC PROPERTIES**

Elastic universal joint Patent  
[NASA-CASE-XNP-00416] c 15 N70-36947  
Deformable vehicle wheel Patent  
[NASA-CASE-MFS-20400] c 31 N71-18611  
Threadless fastener apparatus Patent  
[NASA-CASE-XFR-05302] c 15 N71-23254  
Highly fluorinated polyurethanes  
[NASA-CASE-NPO-10767-1] c 06 N73-33076  
Meter for use in detecting tension in straps having predetermined elastic characteristics  
[NASA-CASE-MFS-22189-1] c 35 N75-19615

**ELASTIC SHEETS**

Method for forming plastic materials Patent  
[NASA-CASE-XMS-05516] c 15 N71-17803

**ELASTOMERS**

Metal valve pintle with encapsulated elastomeric body Patent  
[NASA-CASE-MSC-12116-1] c 15 N71-17648  
Extensometer Patent  
[NASA-CASE-XMF-04680] c 15 N71-19489  
Elastomeric silazane polymers and process for preparing the same Patent  
[NASA-CASE-XMF-04133] c 06 N71-20717  
Bonded elastomeric seal for electrochemical cells Patent  
[NASA-CASE-XGS-02631] c 03 N71-23006  
Conductive elastomeric extensometer  
[NASA-CASE-MFS-21049-1] c 52 N74-27864  
Vacuum pressure molding technique  
[NASA-CASE-LAR-10073-1] c 37 N76-24575  
Method of making hollow elastomeric bodies  
[NASA-CASE-NPO-13535-1] c 37 N76-31524  
Process for spinning flame retardant elastomeric compositions — fabricating synthetic fibers for high oxygen environments  
[NASA-CASE-MSC-14331-3] c 27 N78-32262  
Curable liquid hydrocarbon prepolymers containing hydroxyl groups and process for producing same  
[NASA-CASE-NPO-13137-1] c 27 N80-32514  
Prepolymer dianhydrides  
[NASA-CASE-NPO-13899-1] c 27 N80-32515  
Viscoelastic cationic polymers containing the urethane linkage  
[NASA-CASE-NPO-10830-1] c 27 N81-15104  
Process for the preparation of fluorine containing crosslinked elastomeric polytriazine and product so produced  
[NASA-CASE-ARC-11248-1] c 27 N81-17259  
The 1,2,4-oxadiazole elastomers — heat resistant polymers  
[NASA-CASE-ARC-11253-1] c 27 N81-17262

- Bifunctional monomers having terminal oxime and cyano or amidine groups  
[NASA-CASE-ARC-11253-3] c 27 N81-24256
- Circumferential shaft seal  
[NASA-CASE-LEW-12119-2] c 37 N81-26447
- Heat sealable, flame and abrasion resistant coated fabric --- clothing and containers for space exploration  
[NASA-CASE-MSC-18382-1] c 27 N82-16238
- Preparation of crosslinked 1,2,4-oxadiazole polymer  
[NASA-CASE-ARC-11253-2] c 27 N82-24338
- Method of bonding plasticized elastomer to metal and articles produced thereby  
[NASA-CASE-MFS-25181-1] c 27 N82-24340
- Elastomer toughened polyimide adhesives  
[NASA-CASE-LAR-12775-1] c 27 N83-28240
- Elastomer-modified phosphorus-containing imide resins  
[NASA-CASE-ARC-11400-1] c 27 N84-14322
- Process for preparing perfluorotriazine elastomers and precursors thereof  
[NASA-CASE-ARC-11402-1] c 27 N84-22744
- Elastomer toughened polyimide adhesives --- bonding metal and composite material structures for aircraft and spacecraft  
[NASA-CASE-LAR-12775-2] c 27 N85-21349
- Perfluoro (Imidoylamidine) diamidines  
[NASA-CASE-ARC-11402-3] c 23 N86-21582
- Electro-expulsive separation system  
[NASA-CASE-ARC-11613-1] c 33 N87-28833
- Coaxial cable connector  
[NASA-CASE-NPO-16764-1-CU] c 33 N88-14270
- ELBOW (ANATOMY)**
- Elbow and knee joint for hard space suits  
[NASA-CASE-ARC-11610-1] c 54 N86-28619
- ELECTRIC ARCS**
- Electric-arc heater Patent  
[NASA-CASE-XLA-00330] c 33 N70-34540
- Electric arc welding Patent  
[NASA-CASE-XMF-00392] c 15 N70-34814
- Electric arc driven wind tunnel Patent  
[NASA-CASE-XMF-00411] c 11 N70-36913
- Electric arc device for heating gases Patent  
[NASA-CASE-XAC-00319] c 25 N70-41628
- Electric arc apparatus Patent  
[NASA-CASE-XAC-01677] c 09 N71-20816
- Arc electrode of graphite with ball tip Patent  
[NASA-CASE-XLE-04788] c 09 N71-22987
- High powered arc electrodes --- producing solar simulator radiation  
[NASA-CASE-LEW-11162-1] c 33 N74-12913
- Electric arc light source having undercut recessed anode  
[NASA-CASE-ARC-10266-1] c 33 N75-29318
- Welding torch with arc light reflector  
[NASA-CASE-MFS-29134-1] c 74 N87-17493
- Welding torch gas cup extension  
[NASA-CASE-MFS-29252-1] c 37 N88-23980
- ELECTRIC AUTOMOBILES**
- Additive for zinc electrodes --- electric automobiles  
[NASA-CASE-LEW-13286-1] c 33 N84-14422
- ELECTRIC BATTERIES**
- Spacecraft battery seals  
[NASA-CASE-XGS-03864] c 15 N69-24320
- Sealed battery gas manifold construction Patent  
[NASA-CASE-XNP-03378] c 03 N71-11051
- Method and apparatus for battery charge control Patent  
[NASA-CASE-XGS-05432] c 03 N71-19438
- Coulometer and third electrode battery charging circuit Patent  
[NASA-CASE-GSC-10487-1] c 03 N71-24719
- Heat activated cell Patent  
[NASA-CASE-LEW-11359] c 03 N71-28579
- Synchronous orbit battery cycler  
[NASA-CASE-GSC-11211-1] c 03 N72-25020
- Storage battery comprising negative plates of a wedge shaped configuration --- for preventing shape change induced malfunctions  
[NASA-CASE-NPO-11806-1] c 44 N74-19693
- Battery testing device --- for testing cells of multiple-cell battery  
[NASA-CASE-MFS-20761-1] c 44 N74-27519
- Rapid activation and checkout device for batteries  
[NASA-CASE-MFS-22749-1] c 44 N76-14601
- Zinc-halide battery with molten electrolyte  
[NASA-CASE-NPO-11961-1] c 44 N76-18643
- Lead-oxygen dc power supply system having a closed loop oxygen and water system  
[NASA-CASE-MFS-23059-1] c 44 N76-27664
- Voltage regulator for battery power source --- using a bipolar transistor  
[NASA-CASE-FRC-10116-1] c 33 N79-23345
- In-situ cross linking of polyvinyl alcohol --- application to battery separator films  
[NASA-CASE-LEW-13135-2] c 27 N81-24257
- State-of-charge coulometer  
[NASA-CASE-NPO-15759-1] c 35 N85-21596
- Organic cathode for a secondary battery  
[NASA-CASE-NPO-17604-1-CU] c 33 N90-18124
- Thermal switch disc for short circuit protection of batteries  
[NASA-CASE-MSC-21428-1] c 33 N90-17008
- Copper chloride cathode for a secondary battery  
[NASA-CASE-NPO-17640-1-CU] c 33 N90-17011
- Metal chloride cathode for a battery  
[NASA-CASE-NPO-17809-1-CU] c 33 N90-27041
- ELECTRIC BRIDGES**
- Pulsed excitation voltage circuit for transducers  
[NASA-CASE-FRC-10036] c 09 N72-22200
- Infinite range electronics gain control circuit  
[NASA-CASE-GSC-10786-1] c 10 N72-28241
- Diode-quad bridge circuit means  
[NASA-CASE-ARC-10364-2] c 33 N75-25041
- Germanium coated microbridge and method  
[NASA-CASE-MFS-23274-1] c 33 N78-13320
- Power converter  
[NASA-CASE-FRC-11014-1] c 33 N82-18494
- ELECTRIC CELLS**
- Connector strips-positive, negative and T tabs  
[NASA-CASE-XGS-01395] c 03 N69-21539
- Heat activated cell with alkali anode and alkali salt electrolyte Patent  
[NASA-CASE-LEW-11358] c 03 N71-26084
- Ion-exchange membrane with platinum electrode assembly Patent  
[NASA-CASE-XMS-02063] c 03 N71-29044
- ELECTRIC CHARGE**
- Method and device for determining battery state of charge Patent  
[NASA-CASE-NPO-10194] c 03 N71-20407
- Automatic battery charger Patent  
[NASA-CASE-XNP-04758] c 03 N71-24605
- FET charge sensor and voltage probe  
[NASA-CASE-NPO-16045-1] c 76 N87-13313
- ELECTRIC CHOPPERS**
- Monostable multivibrator  
[NASA-CASE-GSC-10082-1] c 10 N72-20221
- Transformer regulated self-stabilizing chopper  
[NASA-CASE-XGS-09186] c 33 N78-17295
- ELECTRIC COILS**
- Broadband choke for antenna structure  
[NASA-CASE-XMS-05303] c 07 N69-27462
- Shaft transducer having dc output proportional to angular velocity  
[NASA-CASE-NPO-15706-1] c 35 N84-28017
- Phase sensitive guidance sensor for wire-following vehicles  
[NASA-CASE-NPO-15341-1] c 35 N84-33769
- ELECTRIC CONDUCTORS**
- Electrode and insulator with shielded dielectric junction  
[NASA-CASE-XLE-03778] c 09 N69-21542
- Solar cell matrix Patent  
[NASA-CASE-NPO-10821] c 03 N71-19545
- Electrical switching device Patent  
[NASA-CASE-NPO-10037] c 09 N71-19610
- Flexible conductive disc electrode Patent  
[NASA-CASE-FRC-10029] c 09 N71-24618
- Electrical insulating layer process  
[NASA-CASE-LEW-10489-1] c 15 N72-25447
- Injector for use in high voltage isolators for liquid feed lines  
[NASA-CASE-NPO-11377] c 15 N73-27406
- Solar cell grid patterns  
[NASA-CASE-NPO-13087-2] c 44 N76-31666
- Velocity measurement system  
[NASA-CASE-MFS-23363-1] c 35 N78-32396
- Shielded conductor cable system  
[NASA-CASE-MSC-12745-1] c 33 N81-27397
- ELECTRIC CONNECTORS**
- Connector - Electrical  
[NASA-CASE-XLA-01288] c 09 N69-21470
- Test fixture for pellet-like electrical elements  
[NASA-CASE-XNP-06032] c 09 N69-21926
- Coupling device  
[NASA-CASE-XMS-07846-1] c 09 N69-21927
- Electrical feed-through connection for printed circuit boards and printed cable  
[NASA-CASE-XMF-01483] c 14 N69-27431
- Electrical connector pin with wiping action  
[NASA-CASE-XMF-04238] c 09 N69-39734
- Electrical connector Patent Application  
[NASA-CASE-MFS-14741] c 09 N70-20737
- Electrical connector for flat cables Patent  
[NASA-CASE-XMF-00324] c 09 N70-34596
- Printed cable connector Patent  
[NASA-CASE-XMF-00369] c 09 N70-36494
- Printed circuit board with bellows rivet connection Patent  
[NASA-CASE-XNP-05082] c 15 N70-41960
- Method of making a molded connector Patent  
[NASA-CASE-XMF-03498] c 15 N71-15886
- Coaxial cable connector Patent  
[NASA-CASE-XNP-04732] c 09 N71-20851
- Connector internal force gauge Patent  
[NASA-CASE-XNP-03918] c 14 N71-23087
- Protection of serially connected solar cells against open circuits by the use of shunting diode Patent  
[NASA-CASE-XLE-04535] c 03 N71-23354
- Microelectronic module package Patent  
[NASA-CASE-XMS-02182] c 10 N71-28783
- Breakaway connector  
[NASA-CASE-NPO-11140] c 15 N72-17455
- Electrical connector  
[NASA-CASE-NPO-10694] c 09 N72-20200
- Radio frequency filter device  
[NASA-CASE-XLA-02609] c 09 N72-25256
- Use of unilluminated solar cells as shunt diodes for a solar array  
[NASA-CASE-GSC-10344-1] c 03 N72-27053
- Electrical connector  
[NASA-CASE-MFS-20757] c 09 N72-28225
- Device for configuring multiple leads --- method for connecting electric leads to printed circuit board  
[NASA-CASE-MFS-22133-1] c 33 N74-26977
- Connector --- for connecting circuits on different layers of multilayer printed circuit boards  
[NASA-CASE-LAR-11709-1] c 37 N76-27567
- Percutaneous connector device  
[NASA-CASE-KSC-10849-1] c 52 N77-14738
- Magnetic electrical connectors for biomedical percutaneous implants  
[NASA-CASE-KSC-11030-1] c 52 N77-25772
- Decommutator patchboard verifier  
[NASA-CASE-KSC-11065-1] c 33 N81-26359
- Electrical self-aligning connector --- orbital service vehicles  
[NASA-CASE-MFS-25211-2] c 33 N84-14423
- Four-terminal electrical testing device --- initiator bridewire resistance  
[NASA-CASE-MSC-21166-1] c 35 N87-25555
- Coaxial cable connector  
[NASA-CASE-NPO-16764-1-CU] c 33 N88-14270
- ELECTRIC CONTACTS**
- Solid state switch  
[NASA-CASE-XNP-09228] c 09 N69-27500
- Deflective rod switch with elastic support and sealing means Patent  
[NASA-CASE-XNP-09808] c 09 N71-12518
- Method of making electrical contact on silicon solar cell and resultant product Patent  
[NASA-CASE-XLE-04787] c 03 N71-20492
- Continuous turning slip ring assembly Patent  
[NASA-CASE-XMF-01049] c 15 N71-23049
- Electrical connector  
[NASA-CASE-MFS-20757] c 09 N72-28225
- Electrostatic measurement system --- for contact-electrifying a dielectric  
[NASA-CASE-MFS-22129-1] c 33 N75-18477
- Process for preparing liquid metal electrical contact device  
[NASA-CASE-LEW-11978-1] c 33 N77-26385
- Non-contacting power transfer device  
[NASA-CASE-GSC-12595-1] c 33 N82-24422
- Solar cell having improved back surface reflector  
[NASA-CASE-LEW-13620-1] c 44 N83-13579
- Screen printed interdigitated back contact solar cell  
[NASA-CASE-LEW-13414-1] c 44 N85-20530
- Cross-contact chain  
[NASA-CASE-NPO-16784-1] c 33 N87-10231
- ELECTRIC CONTROL**
- Increasing efficiency of switching type regulator circuits Patent  
[NASA-CASE-XMS-09352] c 09 N71-23316
- Adjustable indicating device for load position  
[NASA-CASE-MFS-28008-1] c 35 N85-20300
- ELECTRIC CURRENT**
- Didymium hydrate additive to nickel hydroxide electrodes Patent  
[NASA-CASE-XGS-03505] c 03 N71-10608
- Electrical load protection device Patent  
[NASA-CASE-MSC-12135-1] c 09 N71-12526
- Micro current measuring device using plural logarithmic response heated filamentary type diodes Patent  
[NASA-CASE-XNP-00384] c 09 N71-13530
- Connector internal force gauge Patent  
[NASA-CASE-XNP-03918] c 14 N71-23087
- Pulse modulator providing fast rise and fall times Patent  
[NASA-CASE-XMS-04919] c 09 N71-23270
- Polarity sensitive circuit Patent  
[NASA-CASE-XNP-00952] c 10 N71-23271
- Protection of serially connected solar cells against open circuits by the use of shunting diode Patent  
[NASA-CASE-XLE-04535] c 03 N71-23354



Color television systems using a single gun color cathode ray tube Patent  
 [NASA-CASE-ERC-10098] c 09 N71-28618  
 Current dependent filter inductance  
 [NASA-CASE-ERC-10139] c 09 N72-17154  
 High voltage transistor amplifier with constant current load  
 [NASA-CASE-NPO-11023] c 09 N72-17155  
 Current steering commutator  
 [NASA-CASE-NPO-10743] c 08 N72-21199  
 Saturation current protection apparatus for saturable core transformers  
 [NASA-CASE-ERC-10075-2] c 09 N72-22196  
 Thermal to electrical power conversion system with solid-state switches with Seebeck effect compensation  
 [NASA-CASE-NPO-11388] c 03 N72-23048  
 Load current sensor for a series pulse width modulated power supply  
 [NASA-CASE-GSC-10656-1] c 09 N72-25249  
 Method and apparatus for limiting field emission current  
 [NASA-CASE-ERC-10015-2] c 10 N72-27246  
 Deposition apparatus  
 [NASA-CASE-LAR-10541-1] c 15 N72-32487  
 Lightning current measuring systems  
 [NASA-CASE-KSC-10807-1] c 33 N75-26246  
 Overload protection system for power inverter  
 [NASA-CASE-NPO-13872-1] c 33 N78-10377  
 Shunt regulation electric power system  
 [NASA-CASE-GSC-10135] c 33 N78-17296  
 Lightning current waveform measuring system  
 [NASA-CASE-KSC-11018-1] c 33 N79-10337  
 Electroexplosive device  
 [NASA-CASE-NPO-13858-1] c 28 N79-11231  
 Remote lightning monitor system  
 [NASA-CASE-KSC-11031-1] c 33 N79-11315  
 Lightning current detector  
 [NASA-CASE-KSC-11057-1] c 33 N79-14305  
 Driver for solar cell I-V characteristic plots  
 [NASA-CASE-NPO-14096-1] c 44 N80-18551  
 Electrical power generating system — for windpowered generation  
 [NASA-CASE-MFS-24368-3] c 33 N81-22280  
 Trace water sensor  
 [NASA-CASE-NPO-15722-1] c 35 N85-29212  
 Magnetic spin reduction system for free spinning objects  
 [NASA-CASE-MFS-25966-1] c 16 N86-26352  
 Four quadrant control circuit for a brushless three-phase dc motor  
 [NASA-CASE-MFS-28080-1] c 33 N87-21233  
 Electro-expulsive separation system  
 [NASA-CASE-ARC-11613-1] c 33 N87-28833

**ELECTRIC DISCHARGES**

Electrical discharge apparatus for forming Patent  
 [NASA-CASE-XMF-00375] c 15 N70-34249  
 High voltage pulse generator Patent  
 [NASA-CASE-MSC-12178-1] c 09 N71-13518  
 Pulse generating circuit employing switch means on ends of delay line for alternately charging and discharging same Patent  
 [NASA-CASE-XNP-00745] c 10 N71-28960  
 Rapidly pulsed, high intensity, incoherent light source  
 [NASA-CASE-XLE-2529-3] c 33 N74-20859  
 Voltage feed through apparatus having reduced partial discharge  
 [NASA-CASE-GSC-12347-1] c 33 N80-18286  
 Electrostatic discharge test apparatus  
 [NASA-CASE-MSC-21094-1] c 35 N88-24941  
 Method and apparatus for determining time, direction and composition of impacting space particles  
 [NASA-CASE-LAR-13392-1-CU] c 19 N90-10132

**ELECTRIC ENERGY STORAGE**

Apparatus for measuring current flow Patent  
 [NASA-CASE-XGS-02439] c 14 N71-19431  
 Lead-oxygen dc power supply system having a closed loop oxygen and water system  
 [NASA-CASE-MFS-23059-1] c 44 N76-27664  
 Electrically rechargeable REDOX flow cell  
 [NASA-CASE-LEW-12220-1] c 44 N77-14581  
 Gels as battery separators for soluble electrode cells  
 [NASA-CASE-LEW-12364-1] c 44 N77-22606  
 Electrochemical cell for rebalancing REDOX flow system  
 [NASA-CASE-LEW-13150-1] c 44 N79-26474  
 Toroidal cell and battery — storage battery for high amp-hour load applications  
 [NASA-CASE-LEW-12918-1] c 44 N81-24521

**ELECTRIC EQUIPMENT**

Ac power amplifier Patent Application  
 [NASA-CASE-LAR-10218-1] c 09 N70-34559  
 Generator for a space power system Patent  
 [NASA-CASE-XLE-04250] c 09 N71-20446  
 High impedance measuring apparatus Patent  
 [NASA-CASE-XMS-08589-1] c 09 N71-20569

Regulated power supply Patent  
 [NASA-CASE-XMS-01991] c 09 N71-21449  
 Method for improving the signal-to-noise ratio of the Wheatstone bridge type bolometer Patent  
 [NASA-CASE-XLA-02810] c 14 N71-25901  
 Buck boost voltage regulation circuit Patent  
 [NASA-CASE-GSC-10735-1] c 10 N71-26085  
 Electronically resettable fuse Patent  
 [NASA-CASE-XGS-11177] c 09 N71-27001  
 Voltage regulator Patent  
 [NASA-CASE-ERC-10113] c 09 N71-27053  
 Digital pulse width selection circuit Patent  
 [NASA-CASE-XLA-07788] c 09 N71-29139  
 Solar energy powered heliostole  
 [NASA-CASE-GSC-10945-1] c 21 N72-31637  
 Temperature compensated light source using a light emitting diode  
 [NASA-CASE-ARC-10467-1] c 09 N73-14214  
 Hermetically sealed semiconductor  
 [NASA-CASE-GSC-10791-1] c 15 N73-14469  
 Overvoltage protection network  
 [NASA-CASE-ARC-10197-1] c 33 N74-17929  
 Sprag solenoid brake — development and operations of electrically controlled brake  
 [NASA-CASE-MFS-21846-1] c 37 N74-26976  
 Shock absorbing mount for electrical components  
 [NASA-CASE-NPO-13253-1] c 37 N75-18573  
 Self-regulating proportionally controlled heating apparatus and technique  
 [NASA-CASE-GSC-11752-1] c 77 N75-20140

**ELECTRIC EQUIPMENT TESTS**

Test fixture for pellet-like electrical elements  
 [NASA-CASE-XNP-06032] c 09 N69-21926  
 Pulse amplitude and width detector Patent  
 [NASA-CASE-XMF-06519] c 09 N71-12519  
 High power-high voltage waterload Patent  
 [NASA-CASE-XNP-05381] c 09 N71-20842

**ELECTRIC FIELD STRENGTH**

Apparatus for field strength measurement of a space vehicle Patent  
 [NASA-CASE-XLE-00820] c 14 N71-16014  
 Apparatus for measuring electric field strength on the surface of a model vehicle Patent  
 [NASA-CASE-XLE-02038] c 09 N71-16086  
 Floating two force component measuring device Patent  
 [NASA-CASE-XAC-04885] c 14 N71-23790  
 Apparatus for determining the deflection of an electron beam impinging on a target Patent  
 [NASA-CASE-XMF-06617] c 09 N71-24843

**ELECTRIC FIELDS**

Minimum induced drag airfoil body Patent  
 [NASA-CASE-XLA-00755] c 01 N71-13410  
 Minimum induced drag airfoil body Patent  
 [NASA-CASE-XLA-05828] c 01 N71-13411  
 Instrument for measuring potentials on two dimensional electric field plots Patent  
 [NASA-CASE-XLA-08493] c 10 N71-19421  
 Electron beam instrument for measuring electric fields Patent  
 [NASA-CASE-XMF-10289] c 14 N71-23699  
 Field ionization electrodes Patent  
 [NASA-CASE-ERC-10013] c 09 N71-26678  
 Determining distance to lightning strokes from a single station  
 [NASA-CASE-KSC-10698] c 07 N73-20175  
 Rocket borne instrument to measure electric fields inside electrified clouds  
 [NASA-CASE-KSC-10730-1] c 14 N73-32318  
 Electric field measuring and display system — for cloud formations  
 [NASA-CASE-KSC-10731-1] c 33 N74-27862  
 Lightning discharge identification system  
 [NASA-CASE-KSC-11099-1] c 47 N82-24779  
 Maser cavity servo-tuning system  
 [NASA-CASE-NPO-15890-1-CU] c 33 N85-29143  
 Method of measuring field funneling and range straggling in semiconductor charge-collecting junctions  
 [NASA-CASE-NPO-16584-1-CU] c 76 N86-25269  
 Solidification processing of alloys using an applied electric field  
 [NASA-CASE-MFS-26083-1-CU] c 26 N90-26940

**ELECTRIC FILTERS**

Static inverters which sum a plurality of waves Patent  
 [NASA-CASE-XMF-00663] c 08 N71-18752  
 Remodulator filter Patent  
 [NASA-CASE-NPO-10198] c 09 N71-24806  
 RC networks and amplifiers employing the same  
 [NASA-CASE-XAC-05462-2] c 10 N72-17171  
 Multiloop RC active filter apparatus having low parameter sensitivity with low amplifier gain  
 [NASA-CASE-ARC-10192] c 09 N72-21245  
 Radio frequency filter device  
 [NASA-CASE-XLA-02609] c 09 N72-25256  
 Filter for third order phase locked loops  
 [NASA-CASE-NPO-11941-1] c 10 N73-27171

**ELECTRIC FURNACES**

High gradient directional solidification furnace  
 [NASA-CASE-MFS-25963-1] c 35 N86-20750

**ELECTRIC FUSES**

Electrical load protection device Patent  
 [NASA-CASE-MSC-12135-1] c 09 N71-12526  
 Diode and protection fuse unit Patent  
 [NASA-CASE-KXS-03381] c 09 N71-22796  
 Fused switch  
 [NASA-CASE-XMS-01244-1] c 33 N79-33393

**ELECTRIC GENERATORS**

Regulated dc to dc converter  
 [NASA-CASE-XGS-03429] c 03 N69-21330  
 Generator for a space power system Patent  
 [NASA-CASE-XLE-04250] c 09 N71-20446  
 Solid state pulse generator with constant output width, for variable input width, in nanosecond range Patent  
 [NASA-CASE-XGS-03427] c 10 N71-23029  
 Continuous turning slip ring assembly Patent  
 [NASA-CASE-XMF-01049] c 15 N71-23049  
 Positive dc to positive dc converter Patent  
 [NASA-CASE-XMF-14301] c 09 N71-23188  
 High temperature ferromagnetic cobalt-base alloy Patent  
 [NASA-CASE-XLE-03629] c 17 N71-23248  
 Variable width pulse integrator Patent  
 [NASA-CASE-XLA-03356] c 10 N71-23315  
 Power system with heat pipe liquid coolant lines Patent  
 [NASA-CASE-MFS-14114-2] c 09 N71-24807  
 RC rate generator for slow speed measurement Patent  
 [NASA-CASE-XMF-02966] c 10 N71-24863  
 Pulse width inverter Patent  
 [NASA-CASE-MFS-10068] c 10 N71-25139  
 Multiple varactor frequency doubler Patent  
 [NASA-CASE-XMF-04958-1] c 10 N71-26414  
 Failure sensing and protection circuit for converter networks Patent  
 [NASA-CASE-GSC-10114-1] c 10 N71-27366  
 Power system with heat pipe liquid coolant lines Patent  
 [NASA-CASE-MFS-14114] c 33 N71-27862  
 Load-insensitive electrical device  
 [NASA-CASE-XER-11046] c 09 N72-22203  
 Controllable load insensitive power converters  
 [NASA-CASE-ERC-10268] c 09 N72-25252  
 A dc to ac to dc converter having transistor synchronous rectifiers  
 [NASA-CASE-GSC-11126-1] c 09 N72-25253  
 Electromagnetic wave energy converter  
 [NASA-CASE-GSC-11394-1] c 09 N73-32109  
 Heat operated cryogenic electrical generator  
 [NASA-CASE-NPO-13303-1] c 20 N75-24837  
 Electric power generation system directory from laser power  
 [NASA-CASE-NPO-13308-1] c 36 N75-30524  
 Smoke generator  
 [NASA-CASE-ARC-10905-1] c 37 N77-13418  
 Electro-mechanical sine/cosine generator  
 [NASA-CASE-LAR-11389-1] c 33 N77-26387  
 Wind wheel electric power generator  
 [NASA-CASE-MFS-23515-1] c 44 N80-21828  
 Natural turbulence electrical power generator — using wave action or random motion  
 [NASA-CASE-LAR-11551-1] c 44 N80-29834  
 Electrical power generating system — for windpowered generation  
 [NASA-CASE-MFS-24368-3] c 33 N81-22280  
 Linear magnetic motor/generator — to generate electric energy using magnetic flux for spacecraft power supply  
 [NASA-CASE-GSC-12518-1] c 33 N82-24421  
 Electrical power generating system  
 [NASA-CASE-MFS-25302-1] c 33 N83-28319  
 Control system for an induction motor with energy recovery  
 [NASA-CASE-MFS-25477-1] c 33 N84-14424  
 Solar powered actuator with continuously variable auxiliary power control  
 [NASA-CASE-MFS-25637-1] c 44 N85-21769  
 Liquid hydrogen polygeneration system and process  
 [NASA-CASE-KSC-11304-2] c 28 N86-23744

**ELECTRIC IGNITION**

Method of making a solid propellant rocket motor Patent  
 [NASA-CASE-XLA-04126] c 28 N71-26779

**ELECTRIC MOTOR VEHICLES**

Automotive absorption air conditioner utilizing solar and motor waste heat  
 [NASA-CASE-NPO-15183-1] c 44 N82-26776

**ELECTRIC MOTORS**

Bus voltage compensation circuit for controlling direct current motor  
 [NASA-CASE-XMS-04215-1] c 09 N69-39987  
 Electronic motor control system Patent  
 [NASA-CASE-XMF-01129] c 09 N70-38712

- Electronic beam switching commutator Patent  
[NASA-CASE-XGS-01451] c 09 N71-10677
- Regenerative braking system Patent  
[NASA-CASE-XMF-01096] c 10 N71-16030
- Angular position and velocity sensing apparatus Patent  
[NASA-CASE-XGS-05680] c 14 N71-17585
- Reversible current control apparatus Patent  
[NASA-CASE-XLA-09371] c 10 N71-18724
- Stepping motor control circuit Patent  
[NASA-CASE-GSC-10368-1] c 10 N71-18772
- Detent servo motor Patent  
[NASA-CASE-XNP-06936] c 15 N71-24695
- Transistor servo system including a unique differential amplifier circuit Patent  
[NASA-CASE-XMF-05195] c 10 N71-24861
- Velocity limiting safety system Patent  
[NASA-CASE-XLA-07473] c 15 N71-24895
- Direct current motor with stationary armature and field Patent  
[NASA-CASE-XGS-05290] c 09 N71-25999
- Dual polarity full wave dc motor drive Patent  
[NASA-CASE-XNP-07477] c 09 N71-26092
- Control apparatus for applying pulses of selectively predetermined duration to a sequence of loads Patent  
[NASA-CASE-XGS-04224] c 10 N71-26418
- A dc motor speed control system Patent  
[NASA-CASE-MFS-14610] c 09 N71-26886
- Optimal control system for an electric motor driven vehicle  
[NASA-CASE-NPO-11210] c 11 N72-20244
- Electric motive machine including magnetic bearing  
[NASA-CASE-XGS-07805] c 15 N72-33476
- Redundant speed control for brushless Hall effect motor  
[NASA-CASE-MFS-20207-1] c 09 N73-32107
- Three phase full wave dc motor decoder  
[NASA-CASE-GSC-11824-1] c 33 N77-26386
- Rotary electric device  
[NASA-CASE-GSC-12138-1] c 33 N79-20314
- Controller for computer control of brushless dc motors — automobile engines  
[NASA-CASE-NPO-13970-1] c 33 N81-20352
- Linear magnetic motor/generator — to generate electric energy using magnetic flux for spacecraft power supply  
[NASA-CASE-GSC-12518-1] c 33 N82-24421
- Four quadrant control circuit for a brushless three-phase dc motor  
[NASA-CASE-MFS-28080-1] c 33 N87-21233
- Reciprocating linear motor  
[NASA-CASE-GSC-12773-2] c 33 N87-23904
- ELECTRIC NETWORKS**
- Condition and condition duration indicator Patent  
[NASA-CASE-XMF-01097] c 10 N71-16058
- Solid state pulse generator with constant output width, for variable input width, in nanosecond range Patent  
[NASA-CASE-XGS-03427] c 10 N71-23029
- Increasing efficiency of switching type regulator circuits Patent  
[NASA-CASE-XMS-09352] c 09 N71-23316
- Broadband frequency discriminator Patent  
[NASA-CASE-NPO-10096] c 07 N71-24583
- Test apparatus for locating shorts during assembly of electrical buses  
[NASA-CASE-ARC-11116-1] c 33 N82-24420
- ELECTRIC POTENTIAL**
- Method and apparatus for battery charge control Patent  
[NASA-CASE-XGS-05432] c 03 N71-19438
- Positive dc to positive dc converter Patent  
[NASA-CASE-XMF-14301] c 09 N71-23188
- Variable width pulse integrator Patent  
[NASA-CASE-XLA-03356] c 10 N71-23315
- Voltage dropout sensor Patent  
[NASA-CASE-KSC-10020] c 10 N71-27338
- Automated equipotential plotter  
[NASA-CASE-NPO-11134] c 09 N72-21246
- Pulsed excitation voltage circuit for transducers  
[NASA-CASE-FRC-10036] c 09 N72-22200
- Load-insensitive electrical device  
[NASA-CASE-XER-11046] c 09 N72-22203
- Continuously variable voltage controlled phase shifter  
[NASA-CASE-NPO-11129] c 09 N72-33204
- Photoelectron spectrometer with means for stabilizing sample surface potential  
[NASA-CASE-NPO-13772-1] c 35 N78-10429
- Microcomputerized electric field meter diagnostic and calibration system  
[NASA-CASE-KSC-11035-1] c 35 N78-28411
- Driver for solar cell I-V characteristic plots  
[NASA-CASE-NPO-14096-1] c 44 N80-18551
- Microwave integrated circuit for Josephson voltage standards  
[NASA-CASE-MFS-23845-1] c 33 N81-17348
- Synchronized voltage contrast display analysis system  
[NASA-CASE-NPO-14567-1] c 33 N83-18996
- Method for detecting coliform organisms  
[NASA-CASE-ARC-11322-1] c 51 N83-28849
- Phase detector for three-phase power factor controller  
[NASA-CASE-MFS-25854-1] c 33 N84-27975
- Simplified dc to dc converter  
[NASA-CASE-LEW-13495-1] c 33 N84-33663
- High voltage power supply  
[NASA-CASE-GSC-12818-1] c 33 N85-29147
- Modulated voltage metastable ionization detector  
[NASA-CASE-ARC-11503-1] c 35 N85-34374
- Angular measurement system  
[NASA-CASE-MFS-25825-1] c 31 N86-29055
- FET charge sensor and voltage probe  
[NASA-CASE-NPO-16045-1] c 76 N87-13313
- Single element magnetic suspension actuator  
[NASA-CASE-LAR-13981-1] c 37 N90-15442
- Electronic precipitator control  
[NASA-CASE-LAR-13273-2] c 33 N90-20320
- Alternating gradient photodetector  
[NASA-CASE-NPO-17235-1-CU] c 35 N90-21358
- Induction-type metal detector with increased scanning area capability  
[NASA-CASE-KSC-11386-1] c 35 N90-22023
- Device for quickly sensing the amount of O<sub>2</sub> in a combustion product gas  
[NASA-CASE-LAR-13816-1] c 35 N90-22025
- Nonintrusive method and apparatus for monitoring the cure of polymeric materials  
[NASA-CASE-LAR-13465-1] c 27 N90-23544
- High speed magneto-resistive random access memory  
[NASA-CASE-NPO-17954-1-CU] c 60 N90-26519
- ELECTRIC POWER**
- Switching circuit employing regeneratively connected complementary transistors Patent  
[NASA-CASE-XNP-02654] c 10 N70-42032
- High power-high voltage waterload Patent  
[NASA-CASE-XNP-05381] c 09 N71-20842
- Power factor control system for AC induction motors  
[NASA-CASE-MFS-23280-1] c 33 N78-10376
- Shunt regulation electric power system  
[NASA-CASE-GSC-10135] c 33 N78-17296
- Electrical power generating system — for windpowered generation  
[NASA-CASE-MFS-24368-3] c 33 N81-22280
- ELECTRIC POWER PLANTS**
- Ocean thermal plant  
[NASA-CASE-KSC-11034-1] c 44 N78-32542
- Wind and solar powered turbine  
[NASA-CASE-NPO-15496-1] c 44 N84-23018
- ELECTRIC POWER SUPPLIES**
- Current dependent filter inductance  
[NASA-CASE-ERC-10139] c 09 N72-17154
- Thermal to electrical power conversion system with solid-state switches with Seebeck effect compensation  
[NASA-CASE-NPO-11388] c 03 N72-23048
- Parasitic suppressing circuit  
[NASA-CASE-ERC-10403-1] c 10 N73-26228
- Powerplexer  
[NASA-CASE-MSC-12396-1] c 03 N73-31988
- Inherent redundancy electric heater  
[NASA-CASE-MFS-21462-1] c 33 N74-14935
- Temperature compensated current source  
[NASA-CASE-MSC-11235] c 33 N78-17294
- High voltage power supply  
[NASA-CASE-GSC-12818-1] c 33 N85-29147
- Arc lamp power supply using a voltage multiplier  
[NASA-CASE-LAR-13202-1] c 33 N88-23942
- Magnetically switched power supply system for lasers  
[NASA-CASE-NPO-16402-2] c 33 N88-24862
- ELECTRIC POWER TRANSMISSION**
- Magnetic power switch Patent  
[NASA-CASE-NPO-10242] c 09 N71-24803
- Failure sensing and protection circuit for converter networks Patent  
[NASA-CASE-GSC-10114-1] c 10 N71-27366
- Powerplexer  
[NASA-CASE-MSC-12396-1] c 03 N73-31988
- Microwave power transmission system wherein level of transmitted power is controlled by reflections from receiver  
[NASA-CASE-MFS-21470-1] c 44 N74-19870
- Electrical rotary joint apparatus for large space structures  
[NASA-CASE-MFS-23981-1] c 07 N83-20944
- ELECTRIC PROPULSION**
- Electric propulsion engine test chamber Patent  
[NASA-CASE-XLE-00252] c 11 N70-34844
- ELECTRIC PULSES**
- Pulse counting circuit which simultaneously indicates the occurrence of the nth pulse Patent  
[NASA-CASE-XMF-00906] c 09 N70-41655
- Variable pulse width multiplier Patent  
[NASA-CASE-XLA-02850] c 09 N71-20447
- Phonocardiograph transducer Patent  
[NASA-CASE-XMS-05365] c 14 N71-22993
- Solid state pulse generator with constant output width, for variable input width, in nanosecond range Patent  
[NASA-CASE-XGS-03427] c 10 N71-23029
- Variable width pulse integrator Patent  
[NASA-CASE-XLA-03356] c 10 N71-23315
- Pulse rise time and amplitude detector Patent  
[NASA-CASE-XMF-08804] c 09 N71-24717
- Counter Patent  
[NASA-CASE-XNP-06234] c 10 N71-27137
- Precision rectifier with FET switching means Patent  
[NASA-CASE-ARC-10101-1] c 09 N71-33109
- Phase modulating with odd and even finite power series of a modulating signal  
[NASA-CASE-LAR-11607-1] c 32 N77-14292
- Telephone multiline signaling using common signal pair  
[NASA-CASE-KSC-11023-1] c 32 N79-23310
- Active lamp pulse driver circuit — optical pumping of laser media  
[NASA-CASE-GSC-12566-1] c 33 N83-34189
- ELECTRIC RELAYS**
- Protective circuit of the spark gap type  
[NASA-CASE-XAC-08981] c 09 N69-39897
- Time-division multiplexer Patent  
[NASA-CASE-XNP-00431] c 09 N70-38998
- Out of tolerance warning alarm system for plurality of monitored circuits Patent  
[NASA-CASE-XMS-10984-1] c 10 N71-19417
- Time division radio relay synchronizing system using different sync code words for in sync and out of sync conditions Patent  
[NASA-CASE-GSC-10373-1] c 07 N71-19773
- Circuit breaker utilizing magnetic latching relays Patent  
[NASA-CASE-MSC-11277] c 09 N71-29008
- Multi-cell battery protection system  
[NASA-CASE-LEW-12039-1] c 44 N78-14625
- ELECTRIC ROCKET ENGINES**
- Electron bombardment ion engine Patent  
[NASA-CASE-NPO-04124] c 28 N71-21822
- ELECTRIC SPARKS**
- Method and device for detection of a substance — determining carbon fiber release in fire situations  
[NASA-CASE-NPO-14940-1] c 33 N83-31954
- ELECTRIC STIMULI**
- Tread drum for animals — having an electrical shock station  
[NASA-CASE-ARC-10917-1] c 51 N78-27733
- ELECTRIC SWITCHES**
- Thermionic diode switch Patent  
[NASA-CASE-NPO-10404] c 03 N71-12255
- Deflective rod switch with elastic support and sealing means Patent  
[NASA-CASE-XNP-09808] c 09 N71-12518
- Electrical switching device Patent  
[NASA-CASE-NPO-10037] c 09 N71-19610
- Plural position switch status and operativeness checker Patent  
[NASA-CASE-XLA-08799] c 10 N71-27272
- Pulse generating circuit employing switch means on ends of delay line for alternately charging and discharging same Patent  
[NASA-CASE-XNP-00745] c 10 N71-28960
- Cyclic switch Patent  
[NASA-CASE-LEW-10155-1] c 09 N71-29035
- Telemetry actuated switch  
[NASA-CASE-ARC-10105] c 09 N72-17153
- Differential pressure control  
[NASA-CASE-MFS-14216] c 14 N73-13418
- Fused switch  
[NASA-CASE-XMS-01244-1] c 33 N79-33393
- Pulse switching for high energy lasers  
[NASA-CASE-NPO-14556-1] c 33 N82-24418
- Automatic thermal switch — spacecraft applications  
[NASA-CASE-GSC-12553-1] c 34 N83-28356
- Four quadrant control circuit for a brushless three-phase dc motor  
[NASA-CASE-MFS-28080-1] c 33 N87-21233
- ELECTRIC TERMINALS**
- Electrical connector pin with wiping action  
[NASA-CASE-XMF-04238] c 09 N69-39734
- Electrical connector for flat cables Patent  
[NASA-CASE-XMF-00324] c 09 N70-34596
- Tool attachment for spreading loose elements away from work Patent  
[NASA-CASE-XMF-02107] c 15 N71-10809
- Electrical spot terminal assembly Patent  
[NASA-CASE-NPO-10034] c 15 N71-17685
- Resistance soldering apparatus  
[NASA-CASE-GSC-10913] c 15 N72-22491
- Radio frequency filter device  
[NASA-CASE-XLA-02609] c 09 N72-25256
- Device for configuring multiple leads — method for connecting electric leads to printed circuit board  
[NASA-CASE-MFS-22133-1] c 33 N74-26977

## ELECTRIC WELDING

- Electric welding torch Patent  
[NASA-CASE-XMF-02330] c 15 N71-23798  
Butt welder for fine gauge tungsten/rhenium thermocouple wire  
[NASA-CASE-LAR-10103-1] c 15 N73-14468  
Welding blades to rotors  
[NASA-CASE-LEW-10533-1] c 15 N73-28515

## ELECTRIC WIRE

- Wire grid forming apparatus Patent  
[NASA-CASE-XLE-00023] c 15 N70-33330  
Weld control system using thermocouple wire Patent  
[NASA-CASE-MFS-06074] c 15 N71-20393  
Ablation sensor Patent  
[NASA-CASE-XLA-01794] c 33 N71-21586  
Resistance soldering apparatus  
[NASA-CASE-GSC-10913] c 15 N72-22491  
Lead attachment to high temperature devices  
[NASA-CASE-ERC-10224] c 09 N72-25261  
Means for accommodating large overstrain in lead wires — by storing extra length of wire in stretchable loop  
[NASA-CASE-LAR-10168-1] c 33 N74-22865  
Device for configuring multiple leads — method for connecting electric leads to printed circuit board  
[NASA-CASE-MFS-22133-1] c 33 N74-26977  
High current electrical lead — for thermionic converters  
[NASA-CASE-LEW-10950-1] c 33 N74-27683  
Wire stripper  
[NASA-CASE-FRC-10111-1] c 37 N79-10419  
Method and apparatus for preparing multiconductor cable with flat conductors  
[NASA-CASE-MFS-10946-1] c 31 N79-21226  
Edge coating of flat wires  
[NASA-CASE-XMF-05757-1] c 31 N79-21227  
Thin wire pointing method  
[NASA-CASE-NPO-15789-1] c 31 N83-19947

## ELECTRICAL ENGINEERING

- Relay binary circuit Patent  
[NASA-CASE-XMF-00421] c 09 N70-34502  
Vibrating element electrometer with output signal magnified over input signal by a function of the mechanical Q of the vibrating element Patent  
[NASA-CASE-XAC-02807] c 09 N71-23021

## ELECTRICAL FAULTS

- Apparatus for overcurrent protection of a push-pull amplifier Patent  
[NASA-CASE-MSC-12033-1] c 09 N71-13531  
Failure sensing and protection circuit for converter networks Patent  
[NASA-CASE-GSC-10114-1] c 10 N71-27366  
Solar cell assembly test method  
[NASA-CASE-NPO-10401] c 03 N72-20033  
Shared memory for a fault-tolerant computer  
[NASA-CASE-NPO-13139-1] c 60 N76-21914  
Method and apparatus for transfer function simulator for testing complex systems  
[NASA-CASE-NPO-15696-1] c 33 N85-34333

## ELECTRICAL IMPEDANCE

- High voltage transistor circuit Patent  
[NASA-CASE-XNP-06937] c 09 N71-19516  
High impedance measuring apparatus Patent  
[NASA-CASE-XMS-08589-1] c 09 N71-20569  
Multialarm summary alarm Patent  
[NASA-CASE-XLE-03061-1] c 10 N71-24798  
Signal conditioning circuit apparatus — with constant input impedance  
[NASA-CASE-ARC-10348-1] c 33 N75-19518  
Readout electrode assembly for measuring biological impedance  
[NASA-CASE-ARC-10816-1] c 35 N76-24525  
Solid-state current transformer  
[NASA-CASE-MFS-22560-1] c 33 N77-14335

## ELECTRICAL INSULATION

- Solenoid construction Patent  
[NASA-CASE-XNP-01951] c 09 N70-41929  
Method and apparatus for cryogenic wire stripping Patent  
[NASA-CASE-MFS-10340] c 15 N71-17628  
Plasma device feed system Patent  
[NASA-CASE-XLE-02902] c 25 N71-21694  
Propellant feed isolator Patent  
[NASA-CASE-LEW-10210-1] c 28 N71-26781  
Electrical insulating layer process  
[NASA-CASE-LEW-10489-1] c 15 N72-25447  
Bio-isolated dc operational amplifier — for bioelectric measurements  
[NASA-CASE-ARC-10596-1] c 33 N74-21851  
Stored charge transistor  
[NASA-CASE-NPO-11156-2] c 33 N75-31331  
Method of making an insulation foil  
[NASA-CASE-LEW-11484-1] c 24 N75-33181  
Gas ion laser construction for electrically isolating the pressure gauge thereof  
[NASA-CASE-MFS-22597] c 36 N78-17366

- Wire stripper  
[NASA-CASE-FRC-10111-1] c 37 N79-10419  
Coaxial cable connector  
[NASA-CASE-NPO-16764-1-CU] c 33 N88-14270

## ELECTRICAL MEASUREMENT

- Device for determining the accuracy of the flare on a flared tube  
[NASA-CASE-XKS-03495] c 14 N69-39785  
Bootstrap unloader Patent  
[NASA-CASE-XNP-09768] c 09 N71-12516  
Micro current measuring device using plural logarithmic response heated filamentary type diodes Patent  
[NASA-CASE-XNP-00384] c 09 N71-13530  
Apparatus for field strength measurement of a space vehicle Patent  
[NASA-CASE-XLE-00820] c 14 N71-16014  
Apparatus for measuring current flow Patent  
[NASA-CASE-XGS-02439] c 14 N71-19431  
High voltage divider system Patent  
[NASA-CASE-XLE-02008] c 09 N71-21583  
Ablation sensor Patent  
[NASA-CASE-XLA-01794] c 33 N71-21586  
Hall current measuring apparatus having a series resistor for temperature compensation Patent  
[NASA-CASE-XAC-01662] c 14 N71-23037  
Connector internal force gauge Patent  
[NASA-CASE-XNP-03918] c 14 N71-23087  
Automatic signal range selector for metering devices Patent  
[NASA-CASE-XMS-06497] c 14 N71-26244  
Lightning current measuring systems  
[NASA-CASE-KSC-10807-1] c 33 N75-26246  
Rapid activation and checkout device for batteries  
[NASA-CASE-MFS-22749-1] c 44 N76-14601  
Electrical conductivity cell and method for fabricating the same  
[NASA-CASE-ARC-10810-1] c 33 N76-19339  
Trielectrode capacitive pressure transducer  
[NASA-CASE-ARC-10711-2] c 33 N76-21390  
Readout electrode assembly for measuring biological impedance  
[NASA-CASE-ARC-10816-1] c 35 N76-24525  
Apparatus for measuring semiconductor device resistance  
[NASA-CASE-NPO-14424-1] c 33 N80-32650  
Lightning discharge identification system  
[NASA-CASE-KSC-11099-1] c 47 N82-24779  
Pyroelectric detector arrays  
[NASA-CASE-LAR-12363-1] c 35 N82-31659  
Four-terminal electrical testing device — initiator bridgeway resistance  
[NASA-CASE-MSC-21166-1] c 35 N87-25555

## ELECTRICAL PROPERTIES

- Drift compensation circuit for analog to digital converter Patent  
[NASA-CASE-XNP-04780] c 08 N71-19687  
Electronically resettable fuse Patent  
[NASA-CASE-XGS-11177] c 09 N71-27001  
Voltage regulator Patent  
[NASA-CASE-ERC-10113] c 09 N71-27053  
Radiometric temperature reference Patent  
[NASA-CASE-MSC-13276-1] c 14 N71-27058  
Solar cell matrix  
[NASA-CASE-NPO-11190] c 03 N71-34044  
Storage battery comprising negative plates of a wedge shaped configuration — for preventing shape change induced malfunctions  
[NASA-CASE-NPO-11806-1] c 44 N74-19693  
Thermocouple tape — developed from thermoelectrically different metals  
[NASA-CASE-LEW-11072-2] c 35 N76-15434  
Modification of the electrical and optical properties of polymers — ion irradiation to create texture  
[NASA-CASE-LEW-13027-1] c 27 N80-24437  
Silicon containing electroconductive polymers and structures made therefrom  
[NASA-CASE-NPO-17826-1-CU] c 27 N90-26952

## ELECTRICAL RESISTANCE

- Positive contact resistance soldering unit  
[NASA-CASE-KSC-10242] c 15 N72-23497  
RF-source resistance meters  
[NASA-CASE-NPO-11291-1] c 14 N73-30388  
Apparatus for measuring semiconductor device resistance  
[NASA-CASE-NPO-14424-1] c 33 N80-32650  
Tensile testing apparatus  
[NASA-CASE-LAR-13243-1] c 35 N85-34375  
Four-terminal electrical testing device — initiator bridgeway resistance  
[NASA-CASE-MSC-21166-1] c 35 N87-25555  
A digitally controlled system for effecting and presenting a selected electrical resistance  
[NASA-CASE-MFS-29149-1] c 33 N90-19492

## ELECTRICAL RESISTIVITY

- GaAs solar detector using manganese as a doping agent Patent  
[NASA-CASE-XNP-01328] c 26 N71-18064  
Thermopile vacuum gage tube simulator Patent  
[NASA-CASE-XLA-02758] c 14 N71-18481  
Electrically conductive fluorocarbon polymer  
[NASA-CASE-XLE-06774-2] c 06 N72-25150  
Electrical conductivity cell and method for fabricating the same  
[NASA-CASE-ARC-10810-1] c 33 N76-19339  
Durable antistatic coating for polymethylmethacrylate  
[NASA-CASE-NPO-13867-1] c 27 N78-14164  
Remote lightning monitor system  
[NASA-CASE-KSC-11031-1] c 33 N79-11315  
Lightweight electrically-powered flexible thermal laminate — made of metal and nonconductive yarns  
[NASA-CASE-MSC-12662-1] c 33 N79-12331  
Electrically conductive thermal control coatings  
[NASA-CASE-GSC-12207-1] c 24 N79-14156  
Electrically conductive palladium containing polyimide films  
[NASA-CASE-LAR-12705-1] c 25 N82-26396  
Method of making a high voltage V-groove solar cell  
[NASA-CASE-LEW-13401-1] c 44 N82-29709  
Method and device for detection of a substance — determining carbon fiber release in fire situations  
[NASA-CASE-NPO-14940-1] c 33 N83-31954  
Piezoelectric composite materials  
[NASA-CASE-LEW-12582-1] c 76 N83-34796  
Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NASA-CASE-NPO-15494-2] c 35 N85-34373  
Light weight polymer matrix composite material  
[NASA-CASE-LEW-14734-1] c 24 N89-23623  
Solid state electrical switch employing materials with reversible phase transistors  
[NASA-CASE-NPO-17621-1-CU] c 33 N90-17010  
Alternating gradient photodetector  
[NASA-CASE-NPO-17235-1-CU] c 35 N90-21358  
High temperature electric arc furnace and method  
[NASA-CASE-MFS-28281-1] c 09 N90-23415  
High speed magneto-resistive random access memory  
[NASA-CASE-NPO-17954-1-CU] c 60 N90-26519  
Silicon containing electroconductive polymers and structures made therefrom  
[NASA-CASE-NPO-17826-1-CU] c 27 N90-26952

## ELECTRICITY

- Thermionic converter with current augmented by self induced magnetic field Patent  
[NASA-CASE-XLE-01903] c 22 N71-23599  
Heat exchanger for electrothermal devices  
[NASA-CASE-LEW-14037-1] c 20 N87-16875

## ELECTRO-OPTICS

- Electro-optical scanning apparatus Patent Application  
[NASA-CASE-NPO-11106] c 14 N70-34697  
Electro-optical alignment control system Patent  
[NASA-CASE-XMF-00908] c 14 N70-40238  
Polarimeter for transient measurement Patent  
[NASA-CASE-XNP-08883] c 23 N71-16101  
Light direction sensor  
[NASA-CASE-NPO-11201] c 14 N72-27409  
Ultrastable calibrated light source  
[NASA-CASE-MSC-12293-1] c 14 N72-27411  
Optical conversion method — for spacecraft television  
[NASA-CASE-MSC-12618-1] c 74 N78-17865  
Noncontacting method for measuring angular deflection  
[NASA-CASE-LAR-12178-1] c 74 N80-21138  
Miniature electrooptical air flow sensor  
[NASA-CASE-LAR-13065-1] c 35 N85-20295  
Adjustable mount for electro-optic transducers in an evacuated cryogenic system  
[NASA-CASE-LAR-13100-1] c 37 N87-23982  
Photorefractor ocular screening system  
[NASA-CASE-MFS-26011-1-SB] c 52 N87-24874

## ELECTROACOUSTIC TRANSDUCERS

- Respiration monitor  
[NASA-CASE-FRC-10012] c 14 N72-17329  
Material suspension within an acoustically excited resonant chamber — at near weightless conditions  
[NASA-CASE-NPO-13263-1] c 12 N75-24774  
CDS solid state phase insensitive ultrasonic transducer — annealing dadium sulfide crystals  
[NASA-CASE-LAR-12304-1] c 35 N80-20559

## ELECTROCARDIOGRAPHIC WAVES

- Phonocardiogram simulator Patent  
[NASA-CASE-XKS-10804] c 05 N71-24606  
ELECTROCARDIOGRAPHY  
Phonocardiogram simulator Patent  
[NASA-CASE-XKS-10804] c 05 N71-24606  
Rate meter  
[NASA-CASE-MFS-20418] c 14 N73-24473  
Insulated electrocardiographic electrodes — without paste electrolyte  
[NASA-CASE-MSC-14339-1] c 05 N75-24716

- Pocket ECG electrode  
[NASA-CASE-ARC-11258-1] c 52 N80-33081
- Subcutaneous electrode structure  
[NASA-CASE-ARC-11117-1] c 52 N81-14612
- ELECTROCATALYSTS**
- Electrocatalyst for oxygen reduction  
[NASA-CASE-HQN-10537-1] c 06 N72-10138
- Catalyst surfaces for the chromous/chromic redox couple  
[NASA-CASE-LEW-13148-1] c 33 N80-20487
- Zirconium carbide as an electrocatalyst for the chromous-chromic redox couple  
[NASA-CASE-LEW-13246-1] c 44 N83-27344
- ELECTROCHEMICAL CELLS**
- Apparatus for measuring swelling characteristics of membranes  
[NASA-CASE-XGS-03865] c 14 N69-21363
- Prevention of pressure build-up in electrochemical cells Patent  
[NASA-CASE-XGS-01419] c 03 N70-41864
- Non-magnetic battery case Patent  
[NASA-CASE-XGS-00886] c 03 N71-11053
- Sealing device for an electrochemical cell Patent  
[NASA-CASE-XGS-02630] c 03 N71-22974
- Sealed electrochemical cell provided with a flexible casing Patent  
[NASA-CASE-XGS-01513] c 03 N71-23336
- Electric battery and method for operating same Patent  
[NASA-CASE-XGS-01674] c 03 N71-29129
- Frangible electrochemical cell  
[NASA-CASE-XGS-10010] c 03 N72-15986
- Porus electrode comprising a bonded stack of pieces of corrugated metal foil  
[NASA-CASE-GSC-11368-1] c 09 N73-32108
- Battery testing device — for testing cells of multiple-cell battery  
[NASA-CASE-MFS-20761-1] c 44 N74-27519
- Electrical conductivity cell and method for fabricating the same  
[NASA-CASE-ARC-10810-1] c 33 N76-19339
- Multi-cell battery protection system  
[NASA-CASE-LEW-12039-1] c 44 N78-14625
- Method and device for the detection of phenol and related compounds — in an electrochemical cell  
[NASA-CASE-LEW-12513-1] c 25 N79-22235
- Electrochemical cell for rebalancing REDOX flow system  
[NASA-CASE-LEW-13150-1] c 44 N79-26474
- Catalyst surfaces for the chromous/chromic redox couple  
[NASA-CASE-LEW-13148-1] c 33 N80-20487
- Alkaline electrochemical cells and method of making  
[NASA-CASE-GSC-10349-1] c 44 N82-24645
- Method for determining the point of zero zeta potential of semiconductor  
[NASA-CASE-LAR-12893-1] c 76 N85-30923
- Method and apparatus for rebalancing a REDOX flow cell system  
[NASA-CASE-LEW-14127-1] c 33 N86-20680
- ELECTROCHEMICAL MACHINING**
- Apparatus for electrolytically tapered or contoured cavities  
[NASA-CASE-XNP-08835-1] c 37 N80-14395
- ELECTROCHEMICAL OXIDATION**
- Method and device for the detection of phenol and related compounds — in an electrochemical cell  
[NASA-CASE-LEW-12513-1] c 25 N79-22235
- Epitaxial thinning process  
[NASA-CASE-NPO-15786-1] c 76 N84-35112
- ELECTROCHEMISTRY**
- Electrode for biological recording  
[NASA-CASE-XMS-02872] c 05 N69-21925
- Electrochemical detection device — for use in microbiology  
[NASA-CASE-LAR-11922-1] c 25 N79-24073
- Organic cathode for a secondary battery  
[NASA-CASE-NPO-17604-1-CU] c 33 N90-16124
- Metal chloride cathode for a battery  
[NASA-CASE-NPO-17809-1-CU] c 33 N90-27041
- ELECTRODE FILM BARRIERS**
- Formulated plastic separators for soluble electrode cells — rubber-ion transport membranes  
[NASA-CASE-LEW-12358-1] c 44 N79-17313
- ELECTRODE MATERIALS**
- Electrode carrying wire for GTAW welding  
[NASA-CASE-MFS-29491-1] c 31 N89-23738
- ELECTRODEPOSITION**
- Method of electrolytically binding a layer of semiconductors together Patent  
[NASA-CASE-XNP-01959] c 26 N71-23043
- Method of producing crystalline materials  
[NASA-CASE-NPO-10440] c 15 N72-21466
- Electrophoretic sample insertion — device for uniformly distributing samples in flow path  
[NASA-CASE-MFS-21395-1] c 25 N74-26948
- Multitarget sequential sputtering apparatus  
[NASA-CASE-NPO-13345-1] c 37 N75-19684
- Method and device for the detection of phenol and related compounds — in an electrochemical cell  
[NASA-CASE-LEW-12513-1] c 25 N79-22235
- ELECTRODES**
- Electrode and insulator with shielded dielectric junction  
[NASA-CASE-XLE-03778] c 09 N69-21542
- Electrode for biological recording  
[NASA-CASE-XMS-02872] c 05 N69-21925
- Bonding thermoelectric elements to nonmagnetic refractory metal electrodes  
[NASA-CASE-XGS-04554] c 15 N69-39786
- Ionization vacuum gauge Patent  
[NASA-CASE-XNP-00646] c 14 N70-35666
- Double optic system for ion engine Patent  
[NASA-CASE-XNP-02839] c 28 N70-41922
- Didymium hydrate additive to nickel hydroxide electrodes Patent  
[NASA-CASE-XGS-03505] c 03 N71-10608
- Focussing system for an ion source having apertured electrodes Patent  
[NASA-CASE-XNP-03332] c 09 N71-10618
- Biomedical electrode arrangement Patent  
[NASA-CASE-XFR-10856] c 05 N71-11189
- Electrode construction Patent  
[NASA-CASE-ARC-10043-1] c 05 N71-11193
- Pressed disc type sensing electrodes with ion-screening means Patent  
[NASA-CASE-XMS-04212-1] c 05 N71-12346
- Method of making electrical contact on silicon solar cell and resultant product Patent  
[NASA-CASE-XLE-04787] c 03 N71-20492
- Arc electrode of graphite with ball tip Patent  
[NASA-CASE-XLE-04788] c 09 N71-22987
- Sealing member and combination thereof and method of producing said sealing member Patent  
[NASA-CASE-XMS-01625] c 15 N71-23022
- Automatic recording McLeod gauge Patent  
[NASA-CASE-XLE-03280] c 14 N71-23093
- Flexible conductive disc electrode Patent  
[NASA-CASE-FRC-10029] c 09 N71-24618
- Plated electrodes Patent  
[NASA-CASE-XMS-04213-1] c 09 N71-26002
- Method and apparatus for attaching physiological monitoring electrodes Patent  
[NASA-CASE-XFR-07658-1] c 05 N71-26293
- Field ionization electrodes Patent  
[NASA-CASE-ERC-10013] c 09 N71-26678
- Method of making a perspiration resistant biopotential electrode  
[NASA-CASE-MSC-90153-2] c 05 N72-25120
- Method of making dry electrodes  
[NASA-CASE-FRC-10029-2] c 05 N72-25121
- Compressible biomedical electrode  
[NASA-CASE-MSC-13648] c 05 N72-27103
- Method and apparatus for limiting field emission current  
[NASA-CASE-ERC-10015-2] c 10 N72-27246
- Coaxial high density, hypervelocity plasma generator and accelerator with ionizable metal disc  
[NASA-CASE-MFS-20589] c 25 N72-32688
- Ion thruster with a combination keeper electrode and electron baffle  
[NASA-CASE-NPO-11880] c 28 N73-24783
- Wide temperature range electronic device with lead attachment  
[NASA-CASE-ERC-10224-2] c 09 N73-27150
- Porus electrode comprising a bonded stack of pieces of corrugated metal foil  
[NASA-CASE-GSC-11368-1] c 09 N73-32108
- High powered arc electrodes — producing solar simulator radiation  
[NASA-CASE-LEW-11162-1] c 33 N74-12913
- Method of making porous conductive supports for electrodes — by electroforming and stacking nickel foils  
[NASA-CASE-GSC-11367-1] c 44 N74-19692
- Insulated electrocardiographic electrodes — without paste electrolyte  
[NASA-CASE-MSC-14339-1] c 05 N75-24716
- Readout electrode assembly for measuring biological impedance  
[NASA-CASE-ARC-10816-1] c 35 N76-24525
- Gels as battery separators for soluble electrode cells  
[NASA-CASE-LEW-12364-1] c 44 N77-22606
- Snap-in compressible biomedical electrode  
[NASA-CASE-MSC-14623-1] c 52 N77-28717
- Apparatus for electrolytically tapered or contoured cavities  
[NASA-CASE-XNP-08835-1] c 37 N80-14395
- Toroidal cell and battery — storage battery for high amp-hour load applications  
[NASA-CASE-LEW-12918-1] c 44 N81-24521
- Catalyst surfaces for the chromous/chromic redox couple  
[NASA-CASE-LEW-13148-2] c 44 N81-29524
- Method of making formulated plastic separators for soluble electrode cells  
[NASA-CASE-LEW-12358-2] c 25 N82-21268
- Multistage depressed collector for dual mode operation — for microwave transmitting tubes  
[NASA-CASE-LEW-13282-1] c 33 N82-24415
- Alkaline electrochemical cells and method of making  
[NASA-CASE-GSC-10349-1] c 44 N82-24645
- Thermionic energy converters  
[NASA-CASE-LEW-12443-1] c 44 N83-32175
- Photoelectrochemical electrodes  
[NASA-CASE-NPO-15458-1] c 25 N84-12262
- Electrodes for solid state devices  
[NASA-CASE-NPO-15161-1] c 33 N84-16456
- Method of making a light weight battery plaque  
[NASA-CASE-LEW-13349-1] c 26 N84-22734
- Chromium electrodes for REDOX cells  
[NASA-CASE-LEW-13653-1] c 44 N84-28205
- Ion sputter textured graphite electrode plates  
[NASA-CASE-LEW-12919-2] c 70 N84-28565
- Trace water sensor  
[NASA-CASE-NPO-15722-1] c 35 N85-29212
- Negative electrode catalyst for the iron chromium redox energy storage system  
[NASA-CASE-LEW-14028-1] c 44 N86-19721
- Discharge cell for optogalvanic spectroscopy having orthogonal relationship between the probe laser and discharge axis  
[NASA-CASE-NPO-16271-1] c 35 N86-25753
- Spillage detector for liquid chromatography systems  
[NASA-CASE-MSC-20206-1] c 25 N86-27431
- Edge geometry superconducting tunnel junctions utilizing an NbN/MgO/NbN thin film structure  
[NASA-CASE-NPO-17812-1-CU] c 76 N90-17456
- Microwave field effect transistor  
[NASA-CASE-GSC-12442-2] c 33 N90-20282
- Electrode carrying wire for GTAW welding  
[NASA-CASE-MFS-29491-1] c 31 N90-26168
- ELECTRODIALYSIS**
- Aqueous alkali metal hydroxide insoluble cellulose ether membrane  
[NASA-CASE-XGS-05584-1] c 25 N82-29370
- ELECTROFORMING**
- Method of electroforming a rocket chamber  
[NASA-CASE-LEW-11118-1] c 20 N74-32919
- ELECTROHYDRAULIC FORMING**
- Electrical discharge apparatus for forming Patent  
[NASA-CASE-XMF-00375] c 15 N70-34249
- ELECTROHYDRODYNAMICS**
- Electrohydrodynamic control valve Patent  
[NASA-CASE-NPO-10416] c 12 N71-27332
- ELECTROKINETICS**
- Zeta potential flowmeter Patent  
[NASA-CASE-XNP-06509] c 14 N71-23226
- ELECTROLUMINESCENCE**
- Flat-panel, full-color, electroluminescent display  
[NASA-CASE-LAR-13407-1] c 33 N87-28831
- ELECTROLYSIS**
- Passively regulated water electrolysis rocket engine Patent  
[NASA-CASE-XGS-08729] c 28 N71-14044
- Combined electrolysis device and fuel cell and method of operation Patent  
[NASA-CASE-XLE-01645] c 03 N71-20904
- Polymeric electrolytic hygrometer  
[NASA-CASE-NPO-13948-1] c 35 N78-25391
- ELECTROLYTES**
- Apparatus for measuring swelling characteristics of membranes  
[NASA-CASE-XGS-03865] c 14 N69-21363
- Electrolytically regenerative hydrogen-oxygen fuel cell Patent  
[NASA-CASE-XLE-04526] c 03 N71-11052
- Sealed electrochemical cell provided with a flexible casing Patent  
[NASA-CASE-XGS-01513] c 03 N71-23336
- Compressible biomedical electrode  
[NASA-CASE-MSC-13648] c 05 N72-27103
- Solid electrolyte cell  
[NASA-CASE-NPO-15269-1] c 44 N82-29710
- Chromium electrodes for REDOX cells  
[NASA-CASE-LEW-13653-1] c 44 N84-28205
- Trace water sensor  
[NASA-CASE-NPO-15722-1] c 35 N85-29212
- ELECTROLYTIC CELLS**
- Method of making emf cell  
[NASA-CASE-LEW-11359-2] c 03 N72-20034
- Electrolytic gas operated actuator  
[NASA-CASE-NPO-11369] c 15 N73-13467
- Electrolytic cell structure  
[NASA-CASE-LAR-11042-1] c 33 N75-27252

Reconstituted asbestos matrix --- for use in fuel or electrolysis cells  
 [NASA-CASE-MSC-12568-1] c 24 N76-14204  
 Catalyst surfaces for the chromous/chromic redox couple  
 [NASA-CASE-LEW-13148-1] c 33 N80-20487  
 Cell and method for electrolysis of water and anode  
 [NASA-CASE-MSC-16394-1] c 28 N81-24280  
 Toroidal cell and battery --- storage battery for high amp-hour load applications  
 [NASA-CASE-LEW-12918-1] c 44 N81-24521  
 Solid electrolyte cell  
 [NASA-CASE-NPO-15269-1] c 44 N82-29710  
 State-of-charge coulometer  
 [NASA-CASE-NPO-15759-1] c 35 N85-21596

**ELECTROMAGNETIC ABSORPTION**

Multiple pass reimaging optical system  
 [NASA-CASE-ARC-10194-1] c 23 N73-20741  
 Method and apparatus for background signal reduction in opto-acoustic absorption measurement  
 [NASA-CASE-NPO-13683-1] c 35 N77-14411  
 Electromagnetic radiation energy arrangement --- coatings for solar energy absorption and infrared reflection  
 [NASA-CASE-WOO-00428-1] c 32 N79-19186  
 Electromagnetic power absorber  
 [NASA-CASE-NPO-13830-1] c 32 N80-14281  
 Method and apparatus for determining optical absorption and emission characteristics of a crystal or non-crystalline fiber  
 [NASA-CASE-LAR-13963-1] c 76 N90-24150

**ELECTROMAGNETIC FIELDS**

Tumbler system to provide random motion  
 [NASA-CASE-XGS-02437] c 15 N69-21472  
 Vacuum evaporator with electromagnetic ion steering  
 Patent  
 [NASA-CASE-NPO-10331] c 09 N71-26701  
 Metallic intrusion detector system  
 [NASA-CASE-ARC-10265-1] c 10 N72-28240  
 Low power electromagnetic flowmeter providing accurate zero set  
 [NASA-CASE-ARC-10362-1] c 14 N73-32326  
 Electromagnetic flow rate meter --- for liquid metals  
 [NASA-CASE-LEW-10981-1] c 35 N74-21018  
 Microcomputerized electric field meter diagnostic and calibration system  
 [NASA-CASE-KSC-11035-1] c 35 N78-28411

**ELECTROMAGNETIC HAMMERS**

Method and apparatus for precision sizing and joining of large diameter tubes Patent  
 [NASA-CASE-XMF-05114] c 15 N71-17650  
 Magnetomotive metal working device Patent  
 [NASA-CASE-XMF-03793] c 15 N71-24833

**ELECTROMAGNETIC INTERFERENCE**

Sealed cabinetry Patent  
 [NASA-CASE-MSC-12168-1] c 09 N71-18600  
 Method of treating the surface of a glass member  
 [NASA-CASE-GSC-12110-1] c 27 N77-32308  
 Method and apparatus for enhancing laser absorption sensitivity  
 [NASA-CASE-NPO-16567-1-CU] c 36 N87-28006  
 Method and apparatus for reducing speckle  
 [NASA-CASE-LAR-13771-1] c 36 N89-14428

**ELECTROMAGNETIC MEASUREMENT**

Method and apparatus for determining electromagnetic characteristics of large surface area passive reflectors Patent  
 [NASA-CASE-XGS-02608] c 07 N70-41678  
 Microcomputerized electric field meter diagnostic and calibration system  
 [NASA-CASE-KSC-11035-1] c 35 N78-28411  
 Lightning discharge identification system  
 [NASA-CASE-KSC-11099-1] c 47 N82-24779

**ELECTROMAGNETIC NOISE**

Parametric amplifiers with idler circuit feedback  
 [NASA-CASE-LAR-10253-1] c 09 N72-25258  
 Audio system with means for reducing noise effects  
 [NASA-CASE-NPO-11631] c 10 N73-12244  
 Filtering device --- removing electromagnetic noise from voice communication signals  
 [NASA-CASE-MFS-22729-1] c 32 N76-21366

**ELECTROMAGNETIC PROPERTIES**

Measurement apparatus and procedure for the determination of surface emissivities  
 [NASA-CASE-LAR-13455-1] c 32 N87-21206

**ELECTROMAGNETIC PROPULSION**

Hypervelocity gun --- using both electric and chemical energy for projectile propulsion  
 [NASA-CASE-XLE-03186-1] c 09 N79-21084

**ELECTROMAGNETIC PULSES**

Laser pulse detection method and apparatus  
 [NASA-CASE-NPO-16030-1] c 36 N84-25037

**ELECTROMAGNETIC PUMPS**

Multiducted electromagnetic pump Patent  
 [NASA-CASE-NPO-10755] c 15 N71-27084

Heat exchanger with oscillating flow  
 [NASA-CASE-LAR-14033-1] c 34 N90-27072

**ELECTROMAGNETIC RADIATION**

Inflatable radar reflector unit Patent  
 [NASA-CASE-XMS-00893] c 07 N70-40063  
 Circulator having quarter wavelength resonant post and parametric amplifier circuits utilizing the same Patent  
 [NASA-CASE-XNP-02140] c 09 N71-23097  
 Electromagnetic polarization systems and methods Patent  
 [NASA-CASE-GSC-10021-1] c 09 N71-24595  
 Antenna design for surface wave suppression Patent  
 [NASA-CASE-XLA-10772] c 07 N71-28980  
 Multiple reflection conical microwave antenna  
 [NASA-CASE-NPO-11661] c 07 N73-14130  
 Method and apparatus for measuring electromagnetic radiation  
 [NASA-CASE-LEW-11159-1] c 14 N73-28488  
 Hyperthermia heating apparatus --- cancer therapy  
 [NASA-CASE-NPO-14549-2] c 52 N82-33996  
 Method and apparatus for measuring distance  
 [NASA-CASE-MSC-20912-1] c 32 N88-26568  
 Induction-type metal detector with increased scanning area capability  
 [NASA-CASE-KSC-11386-1] c 35 N90-22023

**ELECTROMAGNETIC SHIELDING**

Method of making shielded flat cable Patent  
 [NASA-CASE-MFS-13687] c 09 N71-28691  
 Wire stripper  
 [NASA-CASE-FRC-10111-1] c 37 N79-10419  
 Shielded conductor cable system  
 [NASA-CASE-MSC-12745-1] c 33 N81-27397

**ELECTROMAGNETIC WAVE FILTERS**

Laser camera and diffusion filter therefore Patent  
 [NASA-CASE-NPO-10417] c 16 N71-33410

**ELECTROMAGNETIC WAVE TRANSMISSION**

Method and apparatus for determining electromagnetic characteristics of large surface area passive reflectors Patent  
 [NASA-CASE-XGS-02608] c 07 N70-41678  
 Gyrotron transmitting tube  
 [NASA-CASE-LEW-13429-1] c 33 N83-31952

**ELECTROMAGNETISM**

Detentling servomotor Patent  
 [NASA-CASE-XNP-06936] c 15 N71-24695  
 Linear magnetic bearing  
 [NASA-CASE-GSC-12517-1] c 37 N83-32067  
 Linear magnetic bearings  
 [NASA-CASE-GSC-12582-2] c 37 N85-20337

**ELECTROMAGNETS**

Electromagnetic mirror drive system  
 [NASA-CASE-XLA-03724] c 14 N69-27461  
 Solenoid construction Patent  
 [NASA-CASE-XNP-01951] c 09 N70-41929  
 Position sensing device employing misaligned magnetic field generating and detecting apparatus Patent  
 [NASA-CASE-XGS-07514] c 23 N71-16099  
 Safe-arm initiator Patent  
 [NASA-CASE-LAR-10372] c 09 N71-18599  
 Magnetic bearing --- for supplying magnetic fluxes  
 [NASA-CASE-GSC-11079-1] c 37 N75-18574  
 Magnetic spin reduction system for free spinning objects  
 [NASA-CASE-MFS-25966-1] c 16 N86-26352  
 Permanent magnet flux-biased magnetic actuator with flux feedback  
 [NASA-CASE-LAR-13785-1] c 70 N90-17403

**ELECTROMECHANICAL DEVICES**

Electromechanical actuator  
 [NASA-CASE-XNP-05975] c 15 N69-23185  
 Bimetallic power controlled actuator  
 [NASA-CASE-XNP-09776] c 09 N69-39929  
 Apparatus for coupling a plurality of ungrounded circuits to a grounded circuit Patent  
 [NASA-CASE-XAC-00086] c 09 N70-33182  
 Apparatus for controlling the velocity of an electromechanical drive for interferometers and the like Patent  
 [NASA-CASE-XGS-03532] c 14 N71-17627  
 Mechanical actuator Patent  
 [NASA-CASE-XGS-04548] c 15 N71-24045  
 Transverse piezoresistance and pinch effect electromechanical transducers Patent  
 [NASA-CASE-ERC-10088] c 26 N71-25490  
 Electromechanical control actuator system Patent  
 [NASA-CASE-ERC-10022] c 15 N71-26635  
 Pressure sensitive transducers Patent  
 [NASA-CASE-ERC-10087] c 14 N71-27334  
 Electro-mechanical sine/cosine generator  
 [NASA-CASE-LAR-10503-1] c 09 N72-21248  
 Ferrofluidic solenoid  
 [NASA-CASE-NPO-11738-1] c 09 N73-30185  
 Electro-mechanical sine/cosine generator  
 [NASA-CASE-LAR-11389-1] c 33 N77-26387  
 Rotary electric device  
 [NASA-CASE-GSC-12138-1] c 33 N79-20314

Coal-shale interface detection system  
 [NASA-CASE-MFS-23720-2] c 43 N80-14423  
 Coal-shale interface detector  
 [NASA-CASE-MFS-23720-1] c 43 N80-23711  
 Magnetic field control --- electromechanical torquing device  
 [NASA-CASE-MFS-23828-1] c 33 N82-26569  
 Piezoelectric composite materials  
 [NASA-CASE-LEW-12582-1] c 76 N83-34796  
 Two-dimensional scanner apparatus --- flaw detector in small flat plates  
 [NASA-CASE-MFS-25687-1] c 35 N84-22928  
 Memory metal actuator  
 [NASA-CASE-NPO-15960-1] c 37 N86-19604  
 Electro-expulsive separation system  
 [NASA-CASE-ARC-11613-1] c 33 N87-28833

**ELECTROMETERS**

Vibrating element electrometer with output signal magnified over input signal by a function of the mechanical Q of the vibrating element Patent  
 [NASA-CASE-XAC-02807] c 09 N71-23021  
 Pyroelectric detector arrays  
 [NASA-CASE-LAR-12363-1] c 35 N82-31659

**ELECTROMIGRATION**

Electromigration process for the purification of molten silicon during crystal growth  
 [NASA-CASE-NPO-14831-1] c 76 N82-30105

**ELECTROMOTIVE FORCES**

Heat activated cell Patent  
 [NASA-CASE-LEW-11359] c 03 N71-28579  
 Three-phase power factor controller with induced EMF sensing  
 [NASA-CASE-MFS-25852-1] c 33 N84-33661

**ELECTROMYOGRAPHY**

Method and apparatus for applying a mechanical force to surface  
 [NASA-CASE-LAR-14009-1] c 37 N90-27115

**ELECTRON ATTACHMENT**

High resolution threshold photoelectron spectroscopy by electron attachment  
 [NASA-CASE-NPO-14078-1] c 72 N80-14877  
 Reversal electron attachment ionizer for detection of trace species  
 [NASA-CASE-NPO-17596-1-CU] c 35 N89-28795

**ELECTRON BEAM WELDING**

Split welding chamber Patent  
 [NASA-CASE-LEW-11531] c 15 N71-14932  
 Device for preventing high voltage arcing in electron beam welding Patent  
 [NASA-CASE-XMF-08522] c 15 N71-19486

**ELECTRON BEAMS**

Electronic beam switching commutator Patent  
 [NASA-CASE-XGS-01451] c 09 N71-10677  
 Method and means for an improved electron beam scanning system Patent  
 [NASA-CASE-ERC-10552] c 09 N71-12539  
 Electron beam instrument for measuring electric fields Patent  
 [NASA-CASE-XMF-10289] c 14 N71-23699  
 Apparatus for determining the deflection of an electron beam impinging on a target Patent  
 [NASA-CASE-XMF-06617] c 09 N71-24843  
 Infrared detectors  
 [NASA-CASE-LAR-10728-1] c 14 N73-12445  
 Electron beam controller --- using magnetic field to refocus spent electron beam in microwave oscillator tube  
 [NASA-CASE-LEW-11617-1] c 33 N74-10195  
 Image tube --- deriving electron beam replica of image  
 [NASA-CASE-GSC-11602-1] c 33 N74-21850  
 Very high intensity light source using a cathode ray tube --- electron beams  
 [NASA-CASE-XNP-01296] c 33 N75-27250  
 Low energy electron magnetometer using a monoenergetic electron beam  
 [NASA-CASE-LAR-12706-1] c 35 N84-12444  
 Isotope separation using tuned laser and electron beam  
 [NASA-CASE-NPO-16907-1-CU] c 25 N88-24732  
 Trochoidal analysis of scattered electrons in a merged electron-ion beam geometry  
 [NASA-CASE-NPO-16789-1-CU] c 72 N89-29169  
 Dual cathode system for electron beam instruments  
 [NASA-CASE-NPO-16878-1-CU] c 35 N90-20351

**ELECTRON BOMBARDMENT**

Ion thruster cathode  
 [NASA-CASE-XLE-07087] c 06 N69-39889  
 Device for measuring electron-beam intensities and for subjecting materials to electron irradiation in an electron microscope  
 [NASA-CASE-XGS-01725] c 14 N69-39982  
 Electron bombardment ion engine Patent  
 [NASA-CASE-XNP-04124] c 28 N71-21822  
 Electronic cathode having a brush-like structure and a relatively thick oxide emissive coating Patent  
 [NASA-CASE-XLE-04501] c 09 N71-23190

Single grid accelerator for an ion thruster  
[NASA-CASE-XLE-10453-2] c 28 N73-27699

Containerless high temperature calorimeter apparatus  
[NASA-CASE-MFS-23923-1] c 35 N81-19426

Mechanical bonding of metal method  
[NASA-CASE-LEW-12941-1] c 26 N83-10170

Diamondlike flake composites  
[NASA-CASE-LEW-13837-1] c 24 N84-22695

Ion sputter textured graphite electrode plates  
[NASA-CASE-LEW-12919-2] c 70 N84-28565

Apparatus and method for quiescent containerless processing of high temperature metals and alloys in low gravity  
[NASA-CASE-MFS-28087-1] c 35 N87-23944

**ELECTRON CAPTURE**  
Multistage depressed collector for dual mode operation — for microwave transmitting tubes  
[NASA-CASE-LEW-13282-1] c 33 N82-24415

**ELECTRON DISTRIBUTION**  
Measurement of plasma temperature and density using radiation absorption  
[NASA-CASE-ARC-10598-1] c 75 N74-30156

**ELECTRON EMISSION**  
Triode thermionic energy converter  
[NASA-CASE-XLE-01015] c 03 N69-39898

Textured carbon surfaces on copper by sputtering  
[NASA-CASE-LEW-14130-1] c 31 N86-32587

**ELECTRON ENERGY**  
Low energy electron magnetometer using a monoenergetic electron beam  
[NASA-CASE-LAR-12706-1] c 35 N84-12444

**ELECTRON FLUX DENSITY**  
Device for measuring electron-beam intensities and for subjecting materials to electron irradiation in an electron microscope  
[NASA-CASE-XGS-01725] c 14 N69-39982

**ELECTRON GUNS**  
Induction heating gun  
[NASA-CASE-LAR-13181-1] c 31 N85-29083

Generation of intense negative ion beams  
[NASA-CASE-NPO-16061-1-CU] c 72 N87-21660

**ELECTRON IRRADIATION**  
Ion rocket Patent  
[NASA-CASE-XLE-00376] c 28 N70-37245

**ELECTRON MICROSCOPES**  
Device for measuring electron-beam intensities and for subjecting materials to electron irradiation in an electron microscope  
[NASA-CASE-XGS-01725] c 14 N69-39982

Method of forming aperture plate for electron microscope  
[NASA-CASE-ARC-10448-2] c 74 N75-12732

Electron microscope aperture system  
[NASA-CASE-ARC-10448-3] c 35 N77-14408

**ELECTRON MICROSCOPY**  
Synchronized voltage contrast display analysis system  
[NASA-CASE-NPO-14567-1] c 33 N83-18996

**ELECTRON OSCILLATIONS**  
Programmable electronic synthesized capacitance  
[NASA-CASE-GSC-12961-1] c 33 N87-22895

**ELECTRON PHOTON CASCADES**  
Resistive anode image converter  
[NASA-CASE-HQN-10876-1] c 33 N76-27473

**ELECTRON PLASMA**  
Method and apparatus for producing a plasma Patent  
[NASA-CASE-XLA-00147] c 25 N70-34661

**ELECTRON SCATTERING**  
Trochoidal analysis of scattered electrons in a merged electron-ion beam geometry  
[NASA-CASE-NPO-16789-1-CU] c 72 N89-29169

**ELECTRON SOURCES**  
Electron microscope aperture system  
[NASA-CASE-ARC-10448-3] c 35 N77-14408

**ELECTRON TRANSFER**  
Process for reducing secondary electron emission Patent  
[NASA-CASE-XNP-09469] c 24 N71-25555

All-optical photochromic spatial light modulators based on photoinduced electron transfer in rigid matrices  
[NASA-CASE-NPO-17612-1-CU] c 74 N90-27487

**ELECTRON TRANSITIONS**  
Diatomic infrared gasdynamic laser — for producing different wavelengths  
[NASA-CASE-ARC-10370-1] c 36 N75-31426

**ELECTRON TUBES**  
Direct radiation cooling of the collector of linear beam tubes  
[NASA-CASE-XNP-09227] c 15 N69-24319

Radiant heater having formed filaments Patent  
[NASA-CASE-XLE-00387] c 33 N70-34812

Ion sputter textured graphite — anode collector plates in electron tube devices  
[NASA-CASE-LEW-12919-1] c 24 N83-10117

Gyrotion transmitting tube  
[NASA-CASE-LEW-13429-1] c 33 N83-31952

**ELECTRON TUNNELING**

Doped Josephson tunneling junction for use in a sensitive IR detector  
[NASA-CASE-NPO-13348-1] c 33 N75-31332

Inelastic tunnel diodes  
[NASA-CASE-LEW-13833-1] c 33 N85-21492

**ELECTRONIC CONTROL**  
Monopulse system with an electronic scanner  
[NASA-CASE-XGS-05582] c 07 N69-27460

Electronic motor control system Patent  
[NASA-CASE-XMF-01129] c 09 N70-38712

Phase multiplying electronic scanning system Patent  
[NASA-CASE-NPO-10302] c 10 N71-26142

Ion beam deflector Patent  
[NASA-CASE-LEW-10689-1] c 28 N71-26173

Peak acceleration limiter for vibrational tester Patent  
[NASA-CASE-NPO-10556] c 14 N71-27185

Digital control and information system  
[NASA-CASE-NPO-11016] c 08 N72-31226

Electronic system for high power load control — solar arrays  
[NASA-CASE-NPO-15358-1] c 33 N83-27126

Closed loop electrostatic levitation system  
[NASA-CASE-NPO-15553-1] c 33 N85-29142

Electronic precipitator control  
[NASA-CASE-LAR-13273-2] c 33 N90-20320

**ELECTRONIC EQUIPMENT**  
Monopulse system with an electronic scanner  
[NASA-CASE-XGS-05582] c 07 N69-27460

Pulse activated polarographic hydrogen detector Patent  
[NASA-CASE-XMF-06531] c 14 N71-17575

Stable amplifier having a stable quiescent point Patent  
[NASA-CASE-XGS-02812] c 09 N71-19466

Static inverter Patent  
[NASA-CASE-XGS-05289] c 09 N71-19470

Circulator having quarter wavelength resonant post and parametric amplifier circuits utilizing the same Patent  
[NASA-CASE-XNP-02140] c 09 N71-23097

Optimum predetection diversity receiving system Patent  
[NASA-CASE-XGS-00740] c 07 N71-23098

Electronic cathode having a brush-like structure and a relatively thick oxide emissive coating Patent  
[NASA-CASE-XLE-04501] c 09 N71-23190

Method and apparatus for varying thermal conductivity Patent  
[NASA-CASE-XNP-05524] c 33 N71-24876

A solid state acoustic variable time delay line Patent  
[NASA-CASE-ERC-10032] c 10 N71-25900

Automatic signal range selector for metering devices Patent  
[NASA-CASE-XMS-06497] c 14 N71-26244

Fringe counter for interferometers Patent  
[NASA-CASE-LAR-10204] c 14 N71-27215

Temperature regulation circuit Patent  
[NASA-CASE-XNP-02792] c 14 N71-28958

Method and apparatus for data compression by a decreasing slope threshold test  
[NASA-CASE-NPO-10769] c 08 N72-11171

Universal environment package with sectional component housing  
[NASA-CASE-KSC-10031] c 15 N72-22486

Lead attachment to high temperature devices  
[NASA-CASE-ERC-10224] c 09 N72-25261

Method and apparatus for detecting surface ions on silicon diodes and transistors  
[NASA-CASE-ERC-10325] c 15 N72-25457

Versatile arithmetic unit for high speed sequential decoder  
[NASA-CASE-NPO-11371] c 08 N73-12177

Data processor with conditionally supplied clock signals  
[NASA-CASE-GSC-10975-1] c 08 N73-13187

Heat detection and compositions and devices therefor  
[NASA-CASE-NPO-10764-1] c 14 N73-14428

Phase control circuits using frequency multiplications for phased array antennas  
[NASA-CASE-ERC-10285] c 10 N73-16206

Junction range finder  
[NASA-CASE-KSC-10108] c 14 N73-25461

Electronic strain-level counter  
[NASA-CASE-LAR-10756-1] c 32 N73-26910

Automatic vehicle location system  
[NASA-CASE-NPO-11850-1] c 32 N74-12912

Automatic focus control for facsimile cameras  
[NASA-CASE-LAR-11213-1] c 35 N75-15014

Electronic analog divider  
[NASA-CASE-LEW-11881-1] c 33 N77-17354

Moisture content and gas sampling device  
[NASA-CASE-MSC-18866-1] c 35 N85-29213

**ELECTRONIC EQUIPMENT TESTS**  
Analog to digital converter tester Patent  
[NASA-CASE-XLA-06713] c 14 N71-28991

Signal conditioner test set  
[NASA-CASE-KSC-10750-1] c 35 N75-12270

Decommutator patchboard verifier  
[NASA-CASE-KSC-11065-1] c 33 N81-26359

Synchronized voltage contrast display analysis system  
[NASA-CASE-NPO-14567-1] c 33 N83-18996

Cross-contact chain  
[NASA-CASE-NPO-16784-1] c 33 N87-10231

**ELECTRONIC FILTERS**  
Self-tuning bandpass filter  
[NASA-CASE-ARC-10264-1] c 09 N73-20231

Capacitance multiplier and filter synthesizing network  
[NASA-CASE-NPO-11948-1] c 33 N74-32712

Notch filter  
[NASA-CASE-MFS-23303-1] c 32 N77-18307

**ELECTRONIC MODULES**  
Thermal conductive connection and method of making same Patent  
[NASA-CASE-XMS-02087] c 09 N70-41717

Solar cell submodule Patent  
[NASA-CASE-XNP-05821] c 03 N71-11056

Heat conductive resiliently compressible structure for space electronics package modules Patent  
[NASA-CASE-MSC-12389] c 33 N71-29052

Tool for use in lifting pin supported objects  
[NASA-CASE-NPO-13157-1] c 37 N74-32918

Phase substitution of spare converter for a failed one of parallel phase staggered converters  
[NASA-CASE-NPO-13812-1] c 33 N77-30365

Method of making encapsulated solar cell modules  
[NASA-CASE-LEW-12185-1] c 44 N78-25528

Electronically scanned pressure sensor module with in situ calibration capability  
[NASA-CASE-LAR-12230-1] c 35 N79-14347

Module failure isolation circuit for paralleled inverters — preventing system failure during power conditioning for spacecraft applications  
[NASA-CASE-NPO-14000-1] c 33 N79-24254

Circuit for automatic load sharing in parallel converter modules  
[NASA-CASE-NPO-14056-1] c 33 N79-24257

Method and apparatus for fabricating improved solar cell modules  
[NASA-CASE-NPO-14416-1] c 44 N81-14389

Redundant operation of counter modules  
[NASA-CASE-NPO-14162-1] c 60 N81-15706

**ELECTRONIC PACKAGING**  
Electrical feed-through connection for printed circuit boards and printed cable  
[NASA-CASE-XMF-01483] c 14 N69-27431

Capacitor and method of making same Patent  
[NASA-CASE-LEW-10364-1] c 09 N71-13522

Method of evaluating moisture barrier properties of encapsulating materials Patent  
[NASA-CASE-NPO-10051] c 18 N71-24934

Microelectronic module package Patent  
[NASA-CASE-XMS-02182] c 10 N71-28783

Frangible electrochemical cell  
[NASA-CASE-XGS-10010] c 03 N72-15986

Hermetically sealed semiconductor  
[NASA-CASE-GSC-10791-1] c 15 N73-14469

Circuit board package with wedge shaped covers  
[NASA-CASE-MFS-21919-1] c 10 N73-25243

Integrated circuit package with lead structure and method of preparing the same  
[NASA-CASE-MFS-21374-1] c 33 N74-12951

Tool for use in lifting pin supported objects  
[NASA-CASE-NPO-13157-1] c 37 N74-32918

Chassis unit insert tightening-extract device  
[NASA-CASE-XMS-01077-1] c 37 N79-33467

Computer circuit card puller  
[NASA-CASE-FRC-11042-1] c 60 N82-24839

Electronic scanning pressure measuring system and transducer package  
[NASA-CASE-ARC-11361-1] c 35 N84-22934

Hermetically sealable package for hybrid solid-state electronic devices and the like  
[NASA-CASE-MSC-20181-1] c 33 N88-23941

**ELECTRONIC RECORDING SYSTEMS**  
Propellant mass distribution metering apparatus Patent  
[NASA-CASE-NPO-10185] c 10 N71-26339

**ELECTRONIC TRANSDUCERS**  
Fiber optic vibration transducer and analyzer Patent  
[NASA-CASE-XMF-02433] c 14 N71-10616

Transducer circuit and catheter transducer Patent  
[NASA-CASE-ARC-10132-1] c 09 N71-24597

Failure sensing and protection circuit for converter networks Patent  
[NASA-CASE-GSC-10114-1] c 10 N71-27366

Electromagnetic transducer recording head having a laminated core section and tapered gap  
[NASA-CASE-NPO-10711-1] c 35 N77-21392

Distributed-switch Dicke radiometers  
[NASA-CASE-GSC-12219-1] c 35 N80-18359



- Electronic scanning pressure measuring system and transducer package  
[NASA-CASE-ARC-11361-1] c 35 N84-22934
- ELECTRONS**  
Means and method for calibrating a photon detector utilizing electron-photon coincidence  
[NASA-CASE-NPO-15644-1] c 35 N84-33767  
Ion generator and ion application system  
[NASA-CASE-MFS-28122-1] c 72 N88-24253  
Reversal electron attachment ionizer for detection of trace species  
[NASA-CASE-NPO-17596-1-CU] c 35 N89-28795  
Slow positron beam generator for lifetime studies  
[NASA-CASE-LAR-14250-1-SB] c 72 N90-27472
- ELECTROPHORESIS**  
Electrophoretic sample insertion --- device for uniformly distributing samples in flow path  
[NASA-CASE-MFS-21395-1] c 25 N74-26948  
Apparatus for conducting flow electrophoresis in the substantial absence of gravity  
[NASA-CASE-MFS-21394-1] c 34 N74-27744  
Automatic multiple-sample applicator and electrophoresis apparatus  
[NASA-CASE-ARC-10991-1] c 25 N78-14104  
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## ENGINEERING DRAWINGS

- High-temperature, high-pressure spherical segment valve Patent  
[NASA-CASE-XAC-00074] c 15 N70-34817
- Lifting body Patent Application  
[NASA-CASE-FRC-10063] c 01 N71-12217
- Optical communications system Patent  
[NASA-CASE-XLA-01090] c 07 N71-12389
- Method of making a molded connector Patent  
[NASA-CASE-XMF-03498] c 15 N71-15986

## ENTHALPY

- Enthalpy and stagnation temperature determination of a high temperature laminar flow gas stream Patent  
[NASA-CASE-XLE-00266] c 14 N70-34156

## ENTRAINMENT

- Water separator  
[NASA-CASE-XMS-01295-1] c 37 N79-21345

## ENUMERATION

- Apparatus and process for microbial detection and enumeration  
[NASA-CASE-LAR-12709-1] c 35 N82-28604

## ENVIRONMENT SIMULATION

- Skeletal stressing method and apparatus Patent  
[NASA-CASE-ARC-10100-1] c 05 N71-24738
- Locomotion and restraint aid Patent  
[NASA-CASE-ARC-10153] c 05 N71-28619

## ENVIRONMENT SIMULATORS

- Space simulator Patent  
[NASA-CASE-NPO-10141] c 11 N71-24964

## ENVIRONMENTAL CONTROL

- Portable environmental control system Patent  
[NASA-CASE-XMS-09632-1] c 05 N71-11203
- Portable superclean air column device Patent  
[NASA-CASE-XMF-03212] c 15 N71-22721
- Thermal control panel Patent  
[NASA-CASE-XLA-07728] c 33 N71-22890
- Dual solid cryogenics for spacecraft refrigeration Patent  
[NASA-CASE-GSC-10188-1] c 23 N71-24725
- Active vibration isolator for flexible bodies Patent  
[NASA-CASE-LAR-10106-1] c 15 N71-27169
- Autoignition test cell Patent  
[NASA-CASE-KSC-10198] c 11 N71-28629
- Universal environment package with sectional component housing  
[NASA-CASE-KSC-10031] c 15 N72-22486
- Air conditioned suit  
[NASA-CASE-LAR-10076-1] c 05 N73-20137
- Dual stage check valve  
[NASA-CASE-MS-C-13587-1] c 15 N73-30459
- Space vehicle with artificial gravity and earth-like environment  
[NASA-CASE-LEW-11101-1] c 31 N73-32750

## ENVIRONMENTAL ENGINEERING

- Thermal control wall panel Patent  
[NASA-CASE-XLA-01243] c 33 N71-22792

## ENVIRONMENTAL MONITORING

- System for real-time crustal deformation monitoring  
[NASA-CASE-NPO-14124-1] c 46 N80-14603
- Vapor fragrancor  
[NASA-CASE-LAR-13680-1] c 35 N87-25561

## ENVIRONMENTAL TESTS

- Multiple environment materials test chamber having a multiple port X-ray tube for irradiating a plurality of samples Patent  
[NASA-CASE-XMS-02930] c 11 N71-23042
- Hard space suit Patent  
[NASA-CASE-XAC-07043] c 05 N71-23161
- Flammability test chamber Patent  
[NASA-CASE-KSC-10126] c 11 N71-24985
- Multi axes vibration fixtures  
[NASA-CASE-MFS-20242] c 14 N73-19421
- Fixture for environmental exposure of structural materials under compression load  
[NASA-CASE-LAR-12602-1] c 39 N83-32081

## ENVIRONMENTS

- Hermetically sealed elbow actuator  
[NASA-CASE-MFS-14710] c 09 N72-22195

## ENZYME ACTIVITY

- Use of the enzyme hexokinase for the reduction of inherent light levels  
[NASA-CASE-XGS-05533] c 04 N69-27487
- Method of detecting and counting bacteria in body fluids  
[NASA-CASE-GSC-11092-2] c 04 N73-27052

## ENZYMES

- Protein sterilization method of firefly luciferase using reduced pressure and molecular sieves  
[NASA-CASE-GSC-10225-1] c 06 N73-27086

## EPICYCLOIDS

- Sequencing device utilizing planetary gear set  
[NASA-CASE-MS-C-19514-1] c 37 N79-20377

## EPITAXY

- Method for the preparation of inorganic single crystal and polycrystalline electronic materials  
[NASA-CASE-XLE-02545-1] c 76 N79-21910
- Epitaxial thinning process  
[NASA-CASE-NPO-15788-1] c 76 N84-35112
- Method of making macrocrystalline or single crystal semiconductor material  
[NASA-CASE-NPO-15904-1] c 76 N86-28760
- Floating emitter solar cell  
[NASA-CASE-NPO-16467-1-CU] c 33 N87-23879

## EPOXY COMPOUNDS

- Synthesis of siloxane-containing epoxy polymers Patent  
[NASA-CASE-MFS-13994-1] c 06 N71-11240
- Siloxane containing epoxide compounds  
[NASA-CASE-MFS-13994-2] c 06 N72-25148
- Fire protection covering for small diameter missiles  
[NASA-CASE-ARC-11104-1] c 15 N79-26100
- Antenna grout replacement system  
[NASA-CASE-NPO-15202-1] c 27 N83-34043
- Cellular thermosetting fluorodiepoxide polymers  
[NASA-CASE-GSC-13008-2] c 27 N90-16949

## EPOXY MATRIX COMPOSITES

- Toughening reinforced epoxy composites with brominated polymeric additives  
[NASA-CASE-ARC-11427-2] c 27 N86-27451

## EPOXY RESINS

- Non-magnetic battery case Patent  
[NASA-CASE-XGS-00886] c 03 N71-11053
- Sealing device for an electrochemical cell Patent  
[NASA-CASE-XGS-02630] c 03 N71-22974
- Hydroforming techniques using epoxy molds Patent  
[NASA-CASE-XLE-05641-1] c 15 N71-26346
- Pressure sensitive transducers Patent  
[NASA-CASE-ERC-10087] c 14 N71-27334
- Epoxy-aziridine polymer product Patent  
[NASA-CASE-NPO-10701] c 06 N71-28620
- Method of repairing discontinuity in fiberglass structures  
[NASA-CASE-LAR-10416-1] c 24 N74-30001
- Transparent fire resistant polymeric structures  
[NASA-CASE-ARC-10813-1] c 27 N76-16230
- Curing agent for polyepoxides and epoxy resins and composites cured therewith --- preventing carbon fiber release  
[NASA-CASE-LEW-13226-1] c 27 N81-17260
- Method of neutralizing the corrosive surface of amine-cured epoxy resins  
[NASA-CASE-GSC-12688-1] c 27 N83-34039
- Fluoroether modified epoxy composites  
[NASA-CASE-ARC-11418-1] c 24 N84-11213
- Process for improving mechanical properties of epoxy resins by addition of cobalt ions  
[NASA-CASE-LAR-13230-1] c 24 N84-34571
- Metal (2) 4,4',4'' phthalocyanine tetraamines as curing agents for epoxy resins  
[NASA-CASE-ARC-11424-1] c 27 N85-34281
- Process for improving moisture resistance of epoxy resins by addition of chromium ions  
[NASA-CASE-LAR-13226-1] c 27 N85-34282
- Toughening reinforced epoxy composites with brominated polymeric additives  
[NASA-CASE-ARC-11427-1] c 24 N86-19380

Seamless metal-clad fiber-reinforced organic matrix composite structures and process for their manufacture  
[NASA-CASE-LAR-13562-1] c 24 N87-18613

Aminophenoxycyclophosphazene cured epoxy resins and the composites, laminates, adhesives and structures thereof  
[NASA-CASE-ARC-11548-1] c 27 N87-25469

## EQUATIONS OF MOTION

- Kinesimetric method and apparatus  
[NASA-CASE-MS-C-18929-1] c 39 N83-20280

## EQUIPMENT

- Bimetallic fluid displacement apparatus --- for stirring and heating stored gases and liquids  
[NASA-CASE-ARC-10441-1] c 35 N74-15126
- Apparatus for supplying conditioned air at a substantially constant temperature and humidity  
[NASA-CASE-GSC-12191-1] c 31 N80-32583

## EQUIPMENT SPECIFICATIONS

- Differential pressure cell Patent  
[NASA-CASE-XAC-00042] c 14 N70-34816
- High-temperature, high-pressure spherical segment valve Patent  
[NASA-CASE-XAC-00074] c 15 N70-34817
- Optical torque meter Patent  
[NASA-CASE-XLE-00503] c 14 N70-34818
- Magnetically centered liquid column float Patent  
[NASA-CASE-XAC-00030] c 14 N70-34820
- Electric propulsion engine test chamber Patent  
[NASA-CASE-XLE-00252] c 11 N70-34844
- Channel-type shell construction for rocket engines and the like Patent  
[NASA-CASE-XLE-00144] c 28 N70-34860
- Non-reusable kinetic energy absorber Patent  
[NASA-CASE-XLE-00810] c 15 N70-34861
- Silt regulated gas journal bearing Patent  
[NASA-CASE-XNP-00476] c 15 N70-38620
- Optical communications system Patent  
[NASA-CASE-XLA-01090] c 07 N71-12389
- Stretcher Patent  
[NASA-CASE-XMF-06589] c 05 N71-23159
- Rocket thrust throttling system  
[NASA-CASE-LEW-10374-1] c 28 N73-13773
- Process for making diamonds  
[NASA-CASE-MFS-20698-2] c 15 N73-19457
- Anti-buckling fatigue test assembly --- for subjecting metal specimen to tensile and compressive loads at constant temperature  
[NASA-CASE-LAR-10426-1] c 09 N74-19528
- Apparatus for conducting flow electrophoresis in the substantial absence of gravity  
[NASA-CASE-MFS-21394-1] c 34 N74-27744
- Thermocouple tape --- developed from thermoelectrically different metals  
[NASA-CASE-LEW-11072-2] c 35 N76-15434
- Field effect transistor and method of construction thereof  
[NASA-CASE-MFS-23312-1] c 33 N78-27326
- Constant magnification optical tracking system  
[NASA-CASE-NPO-14813-1] c 74 N82-24072
- Remotely controlled spray gun  
[NASA-CASE-MFS-28110-1] c 37 N87-24689
- Improved method and apparatus for waste collection and storage  
[NASA-CASE-MS-C-21025-1] c 31 N87-25495
- Electrostatic discharge test apparatus  
[NASA-CASE-MS-C-21094-1] c 35 N88-24941
- Vibration analyzer  
[NASA-CASE-MS-C-21408-1] c 37 N89-28829

## EQUIPOTENTIALS

- Equipotential space suit Patent  
[NASA-CASE-LAR-10007-1] c 05 N71-11195
- Instrument for measuring potentials on two dimensional electric field plots Patent  
[NASA-CASE-XLA-08493] c 10 N71-19421

## ERGOMETERS

- Restraint system for ergometer  
[NASA-CASE-MFS-21046-1] c 14 N73-27377
- Ergometer  
[NASA-CASE-MFS-21109-1] c 05 N73-27941
- Tilting table for ergometer and for other biomedical devices  
[NASA-CASE-MFS-21010-1] c 05 N73-30078
- Foot pedal operated fluid type exercising device  
[NASA-CASE-MS-C-11561-1] c 05 N73-32014
- Ergometer calibrator --- for any ergometer utilizing rotating shaft  
[NASA-CASE-MFS-21045-1] c 35 N75-15932

## EROSION

- Thermal shock and erosion resistant tantalum carbide ceramic material  
[NASA-CASE-LAR-11902-1] c 27 N78-17206

## ERROR ANALYSIS

- Program for computer aided reliability estimation  
[NASA-CASE-NPO-13086-1] c 15 N73-12495

Bit error rate measurement above and below bit rate tracking threshold  
[NASA-CASE-MSC-12743-1] c 32 N79-10263

Digital phase-lock loop having an estimator and predictor of error  
[NASA-CASE-NPO-17196-1-CU] c 32 N88-29076

Self-checking on-line testable static RAM  
[NASA-CASE-NPO-17939-1-CU] c 60 N90-26518

**ERROR CORRECTING CODES**

Error correction method and apparatus for electronic timepieces  
[NASA-CASE-LAR-12654-1] c 33 N83-36357

Self-correcting electronically scanned pressure sensor  
[NASA-CASE-LAR-12686-1] c 35 N84-14491

Reed-Solomon decoder  
[NASA-CASE-NPO-15982-1] c 60 N87-21591

Processing circuit with asymmetry corrector and convolutional encoder for digital data  
[NASA-CASE-MSC-20187-1] c 33 N87-25531

Local area network with fault-checking, priorities, and redundant backup  
[NASA-CASE-NPO-16949-1-CU] c 62 N90-19776

VLSI architecture for a Reed-Solomon decoder  
[NASA-CASE-NPO-17897-1-CU] c 33 N90-27040

**ERROR CORRECTING DEVICES**

Automatic fault correction system for parallel signal channels Patent  
[NASA-CASE-XNP-03263] c 09 N71-18843

Elimination of frequency shift in a multiplex communication system Patent  
[NASA-CASE-XNP-01306] c 07 N71-20814

Error correcting method and apparatus Patent  
[NASA-CASE-XNP-02748] c 08 N71-22749

Failure detection and control means for improved drift performance of a gimbaled platform system  
[NASA-CASE-MFS-23551-1] c 04 N76-26175

Guide for a typewriter  
[NASA-CASE-MFS-15218-1] c 37 N77-19457

**ERROR DETECTION CODES**

Self-testing and repairing computer Patent  
[NASA-CASE-NPO-10567] c 08 N71-24633

Local area network with fault-checking, priorities, and redundant backup  
[NASA-CASE-NPO-16949-1-CU] c 62 N90-19776

**ERROR SIGNALS**

Automatic fault correction system for parallel signal channels Patent  
[NASA-CASE-XNP-03263] c 09 N71-18843

Sampled data controller Patent  
[NASA-CASE-GSC-10554-1] c 08 N71-29033

Bit error rate measurement above and below bit rate tracking threshold  
[NASA-CASE-MSC-12743-1] c 32 N79-10263

Triac failure detector  
[NASA-CASE-MFS-25607-1] c 33 N83-34190

Automated weld torch guidance control system  
[NASA-CASE-MFS-25807-2] c 37 N86-21850

Comparator with noise suppression  
[NASA-CASE-LAR-13151-1] c 33 N87-21235

Self-checking on-line testable static RAM  
[NASA-CASE-NPO-17939-1-CU] c 60 N90-26518

Multistage estimation of received carrier signal parameters under very high dynamic conditions of the receiver  
[NASA-CASE-NPO-17911-1-CU] c 32 N90-27016

Modified fast frequency acquisition via adaptive least squares algorithm  
[NASA-CASE-NPO-17845-1-CU] c 61 N90-27341

**ERRORS**

Analog-to-digital converter  
[NASA-CASE-MSC-13110-1] c 08 N72-22163

Compensation for primary reflector wavefront error  
[NASA-CASE-NPO-16869-1-CU] c 74 N86-33138

Porous plug for reducing orifice induced pressure error in airfoils  
[NASA-CASE-LAR-13569-1] c 35 N89-12841

**ESCAPE CAPSULES**

Aerial capsule emergency separation device Patent  
[NASA-CASE-XLA-00115] c 03 N70-33343

Emergency escape system Patent  
[NASA-CASE-XKS-02342] c 05 N71-11199

Emergency earth orbital escape device  
[NASA-CASE-MSC-13281] c 31 N72-18859

**ESCAPE SYSTEMS**

Emergency escape system Patent  
[NASA-CASE-MSC-12086-1] c 05 N71-12345

Emergency escape system Patent  
[NASA-CASE-XKS-07814] c 15 N71-27067

Explosively activated egress area  
[NASA-CASE-LAR-12624-1] c 01 N83-35992

**ESCHERICHIA**

Method for detecting coliform organisms  
[NASA-CASE-ARC-11322-1] c 51 N83-28849

**ESTERS**

Fluorinated esters of polycarboxylic acids  
[NASA-CASE-MFS-21040-1] c 06 N73-30098

**ESTIMATING**

Digital phase-lock loop having an estimator and predictor of error  
[NASA-CASE-NPO-17196-1-CU] c 32 N88-29076

Multistage estimation of received carrier signal parameters under very high dynamic conditions of the receiver  
[NASA-CASE-NPO-17911-1-CU] c 32 N90-27016

Modified fast frequency acquisition via adaptive least squares algorithm  
[NASA-CASE-NPO-17845-1-CU] c 61 N90-27341

**ETCHING**

Masking device Patent  
[NASA-CASE-XNP-02092] c 15 N70-42033

Method for etching copper Patent  
[NASA-CASE-XGS-06306] c 17 N71-16044

High resolution developing of photosensitive resists Patent  
[NASA-CASE-XGS-04993] c 14 N71-17574

Etching of aluminum for bonding Patent  
[NASA-CASE-XMF-02303] c 17 N71-23828

Selective plating of etched circuits without removing previous plating Patent  
[NASA-CASE-XGS-03120] c 15 N71-24047

Plating nickel on aluminum castings Patent  
[NASA-CASE-XNP-04148] c 17 N71-24830

Scanning nozzle plating system — for etching or plating metals on substrates without masking  
[NASA-CASE-NPO-11758-1] c 31 N74-23065

Method for applying photographic resists to otherwise incompatible substrates  
[NASA-CASE-MSC-18107-1] c 27 N81-25209

Method of making V-MOS field effect transistors utilizing a two-step anisotropic etching and ion implantation  
[NASA-CASE-GSC-12515-1] c 33 N81-26360

Liquid immersion apparatus for minute articles  
[NASA-CASE-MFS-25363-1] c 37 N82-12441

Controlled in situ etch-back  
[NASA-CASE-NPO-15625-1] c 76 N83-20789

Method of making an ion beam sputter-etched ventricular catheter for hydrocephalus shunt  
[NASA-CASE-LEW-13107-2] c 52 N84-23095

Ion beam sputter etching  
[NASA-CASE-LEW-13899-1] c 31 N87-21160

Seamless metal-clad fiber-reinforced organic matrix composite structures and process for their manufacture  
[NASA-CASE-LAR-13562-1] c 24 N90-25196

**ETHANE**

The 1,1,1-triaryl-2,2,2-trifluoroethanes and process for their synthesis  
[NASA-CASE-ARC-11097-1] c 25 N82-24312

Substituted 1,1,1-triaryl-2,2,2-trifluoroethanes and processes for their synthesis  
[NASA-CASE-LEW-14345-2] c 25 N90-23497

**ETHERS**

Method of producing alternating ether siloxane copolymers Patent  
[NASA-CASE-XMF-02584] c 06 N71-20905

Hydroxy terminated perfluoro ethers Patent  
[NASA-CASE-NPO-10768] c 06 N71-27254

Polyurethane resins from hydroxy terminated perfluoro ethers  
[NASA-CASE-NPO-10768-2] c 06 N72-27144

Process of treating cellulosic membrane and alkaline with membrane separator  
[NASA-CASE-GSC-10019-1] c 44 N82-24641

Separator for alkaline electric cells and method of making  
[NASA-CASE-GSC-10017-1] c 44 N82-24643

Perfluoro (imidoylamidine) diamidines  
[NASA-CASE-ARC-11402-3] c 23 N86-21582

Polyarylene ethers with improved properties  
[NASA-CASE-LAR-13555-1] c 23 N86-32526

Polyimides with carbonyl and ether connecting groups between the aromatic rings  
[NASA-CASE-LAR-14001-1] c 27 N90-15260

Imide/arylene ether copolymers  
[NASA-CASE-LAR-14159-1-CU] c 27 N90-26953

**ETHYL COMPOUNDS**

Precision heat forming of tetrafluoroethylene tubing  
[NASA-CASE-MSC-18430-1] c 37 N82-24491

Ethynyl and substituted ethynyl-terminated polysulfones  
[NASA-CASE-LAR-12831-1] c 27 N84-22747

The 5-(4-Ethynylphenoxy) isophthalic chloride  
[NASA-CASE-LAR-13316-2] c 27 N87-14515

**ETHYLENE OXIDE**

Process for preparing sterile solid propellants Patent  
[NASA-CASE-XNP-01749] c 27 N70-41897

Processing for producing a sterilized instrument Patent  
[NASA-CASE-XNP-09763] c 14 N71-20461

System for sterilizing objects — cleaning space vehicle systems  
[NASA-CASE-KSC-11085-1] c 54 N81-24724

**EUTECTIC ALLOYS**

Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-1] c 37 N75-15992

Method of growing composites of the type exhibiting the Soret effect — improved structure of eutectic alloy crystals  
[NASA-CASE-MFS-22926-1] c 24 N77-27187

Directionally solidified eutectic gamma plus beta nickel-base superalloys  
[NASA-CASE-LEW-12906-1] c 26 N77-32279

Directionally solidified eutectic gamma-gamma nickel-base superalloys  
[NASA-CASE-LEW-12905-1] c 26 N78-18183

Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-3] c 24 N79-25143

**EVACUATING (VACUUM)**

Method for making a heat insulating and ablative structure  
[NASA-CASE-XMS-01108] c 15 N69-24322

Evacuation port seal Patent  
[NASA-CASE-XMF-03290] c 15 N71-23256

Leak detector wherein a probe is monitored with ultraviolet radiation Patent  
[NASA-CASE-ERC-10034] c 15 N71-24896

Evacuated, displacement compression mold — of tubular bodies from thermosetting plastics  
[NASA-CASE-LAR-10782-2] c 31 N75-13111

**EVAPORATION**

Evaporant holder  
[NASA-CASE-XLA-03105] c 15 N69-27483

Method of evaporation  
[NASA-CASE-NPO-15609-2] c 25 N88-23846

Convergent strand array liquid pumping system  
[NASA-CASE-NPO-17301-1-CU] c 31 N90-23587

**EVAPORATIVE COOLING**

Tubular sublimatory evaporator heat sink  
[NASA-CASE-ARC-10912-1] c 34 N77-19353

Capillary heat transport and fluid management device  
[NASA-CASE-MFS-28217-1] c 34 N89-14392

**EVAPORATORS**

Evaporant source for vapor deposition Patent  
[NASA-CASE-XMF-06065] c 15 N71-20395

Deposition apparatus  
[NASA-CASE-LAR-10541-1] c 15 N72-32487

Thermal control system — removing waste heat from industrial process spacecraft  
[NASA-CASE-GSC-12771-1] c 34 N84-14461

Multi-leg heat pipe evaporator  
[NASA-CASE-MSC-20812-1] c 34 N86-27593

**EXAMINATION**

Apparatus for use in examining the lattice of a semiconductor wafer by X-ray diffraction  
[NASA-CASE-MFS-23315-1] c 76 N78-24950

Method of examining microcircuit patterns  
[NASA-CASE-NPO-16299-1] c 33 N87-14594

**EXCHANGING**

Procedure to prepare transparent silica gels  
[NASA-CASE-LAR-13476-1-CU] c 76 N87-29360

**EXCITATION**

Trochoidal analysis of scattered electrons in a merged electron-ion beam geometry  
[NASA-CASE-NPO-16789-1-CU] c 72 N89-29169

**EXCLUSION**

Counter pumping debris excluder and separator — gas turbine shaft seals  
[NASA-CASE-LEW-11855-1] c 07 N78-25090

**EXHAUST EMISSION**

Apparatus and method for destructive removal of particles contained in flowing fluid  
[NASA-CASE-NPO-15426-1] c 35 N84-17555

**EXHAUST GASES**

Device for suppressing sound and heat produced by high-velocity exhaust jets Patent  
[NASA-CASE-XMF-01813] c 28 N70-41582

Gas turbine exhaust nozzle — for noise reduction  
[NASA-CASE-LEW-11569-1] c 07 N74-15453

Abating exhaust noises in jet engines  
[NASA-CASE-ARC-10712-1] c 07 N74-33218

Exhaust flow deflector — for ducted gas flow  
[NASA-CASE-LAR-11570-1] c 34 N76-18364

Gas turbine engine with recirculating bleed  
[NASA-CASE-LEW-12452-1] c 07 N78-25089

High performance ammonium nitrate propellant  
[NASA-CASE-NPO-14260-1] c 28 N79-28342

Supercritical fuel injection system  
[NASA-CASE-LEW-12990-1] c 07 N81-29129

**EXHAUST NOZZLES**

Annular rocket motor and nozzle configuration Patent  
[NASA-CASE-XLE-00078] c 28 N70-33284

Nozzle Patent  
[NASA-CASE-XLA-00154] c 28 N70-33374

Penshape exhaust nozzle for supersonic engine Patent  
[NASA-CASE-XLE-00057] c 28 N70-38711

- Ejection unit Patent  
[NASA-CASE-XNP-00676] c 15 N70-38996  
Two dimensional wedge/translating shroud nozzle  
[NASA-CASE-LAR-11919-1] c 07 N78-27121  
Variable area exhaust nozzle  
[NASA-CASE-LEW-12378-1] c 07 N79-14097  
Noise suppressor for turbo fan jet engines  
[NASA-CASE-ARC-10812-1] c 07 N83-33884  
Apparatus and method for jet noise suppression  
[NASA-CASE-LAR-11903-2] c 71 N84-14873

**EXOTHERMIC REACTIONS**

- Ambient cure polyimide foams --- thermal resistant foams  
[NASA-CASE-ARC-11170-1] c 27 N79-11215  
Exothermic furnace module  
[NASA-CASE-MFS-25707-1] c 35 N82-26631  
Thermal control system --- removing waste heat from industrial process spacecraft  
[NASA-CASE-GSC-12771-1] c 34 N84-14461

**EXPANDABLE STRUCTURES**

- Connector strips-positive, negative and T tabs  
[NASA-CASE-XGS-01395] c 03 N69-21539  
Reflector space satellite Patent  
[NASA-CASE-XLA-00138] c 31 N70-37981  
Foldable conduit Patent  
[NASA-CASE-XLE-00620] c 32 N70-41579  
Collapsible high gain antenna  
[NASA-CASE-KSC-10392] c 07 N73-26117  
Expandable space frames  
[NASA-CASE-ERC-10365-1] c 31 N73-32749  
Means for accommodating large overstrain in lead wires --- by storing extra length of wire in stretchable loop  
[NASA-CASE-LAR-10168-1] c 33 N74-22865  
Antenna deployment mechanism for use with a spacecraft --- extensible and retractable telescopic antenna mast  
[NASA-CASE-GSC-12331-1] c 18 N80-14183  
Synchronously deployable truss structure  
[NASA-CASE-LAR-13117-1] c 37 N86-25789  
Protective telescoping shield for solar concentrator  
[NASA-CASE-NPO-18236-1] c 44 N86-27706  
Deployable geodesic truss structure  
[NASA-CASE-LAR-13113-1] c 31 N87-25492

**EXPANSION**

- Apparatus for measuring swelling characteristics of membranes  
[NASA-CASE-XGS-03865] c 14 N69-21363  
Method for alleviating thermal stress damage in laminates  
[NASA-CASE-LEW-12493-2] c 24 N81-26179  
Dynamic range compression/expansion of light beams by photorefractive crystals  
[NASA-CASE-NPO-17140-1-CU] c 74 N89-14077

**EXPERIMENT DESIGN**

- Hydrofoil Patent  
[NASA-CASE-XLA-00229] c 12 N70-33305  
Sealed battery gas manifold construction Patent  
[NASA-CASE-XNP-03378] c 03 N71-11051  
Electrode construction Patent  
[NASA-CASE-ARC-10043-1] c 05 N71-11193  
G conditioning suit Patent  
[NASA-CASE-XLA-02898] c 05 N71-20268  
Hard space suit Patent  
[NASA-CASE-XAC-07043] c 05 N71-23161

**EXPERT SYSTEMS**

- Discrete event simulation tool for analysis of qualitative models of continuous processing systems  
[NASA-CASE-MS-C-12465-1] c 61 N90-16410

**EXPIRED AIR**

- Metabolic rate meter and method  
[NASA-CASE-MS-C-12239-1] c 52 N79-21750

**EXPLOSIONS**

- Combustion detector  
[NASA-CASE-LAR-10739-1] c 14 N73-16484

**EXPLOSIVE DEVICES**

- Tubular coupling having frangible connecting means  
[NASA-CASE-XLA-02854] c 15 N69-27490  
Hermetically sealed explosive release mechanism Patent  
[NASA-CASE-XGS-00824] c 15 N71-16078  
Nonmagnetic, explosive actuated indexing device Patent  
[NASA-CASE-XGS-02422] c 15 N71-21529  
Linear explosive comparison  
[NASA-CASE-LAR-10800-1] c 33 N72-27959  
Disconnect unit  
[NASA-CASE-NPO-11330] c 33 N73-26958  
Pressure limiting propellant actuating system  
[NASA-CASE-MS-C-18179-1] c 20 N80-18097  
Toggle release  
[NASA-CASE-MS-C-21354-1] c 37 N88-24969

**EXPLOSIVE FORMING**

- Electrical discharge apparatus for forming Patent  
[NASA-CASE-XMF-00375] c 15 N70-34249

**EXPLOSIVE WELDING**

- Totally confined explosive welding --- apparatus to reduce noise level and protect personnel during explosive bonding  
[NASA-CASE-LAR-10941-1] c 37 N74-21057  
Method of making an explosively welded scarf joint  
[NASA-CASE-LAR-11211-1] c 37 N75-12326  
Totally confined explosive welding  
[NASA-CASE-LAR-10941-2] c 37 N79-13364  
Tool and process for miniature explosive joining of tubes  
[NASA-CASE-LAR-13662-1] c 37 N88-14359

**EXPLOSIVES**

- Synthesis of superconducting compounds by explosive compaction of powders  
[NASA-CASE-MFS-20881-1] c 18 N73-32437  
Optically detonated explosive device  
[NASA-CASE-NPO-11743-1] c 28 N74-27425  
Electroexplosive device  
[NASA-CASE-NPO-13858-1] c 28 N79-11231

**EXPONENTIAL FUNCTIONS**

- Digital quasi-exponential function generator  
[NASA-CASE-NPO-11130] c 08 N72-20176

**EXPOSURE**

- Exposure interlock for oscilloscope cameras  
[NASA-CASE-LAR-10319-1] c 14 N73-32322  
Selective image area control of X-ray film exposure density  
[NASA-CASE-NPO-13808-1] c 35 N78-15461  
Fixture for environmental exposure of structural materials under compression load  
[NASA-CASE-LAR-12602-1] c 39 N83-32081  
Method and apparatus for maintaining thermal control in plasma conditions  
[NASA-CASE-MFS-28368-1] c 75 N90-10717

**EXPULSION**

- Electro-expulsive separation system  
[NASA-CASE-ARC-11613-1] c 33 N87-28833

**EXPULSION BLADDERS**

- Expulsion bladder-equipped storage tank structure Patent  
[NASA-CASE-XNP-00612] c 11 N70-38182

**EXTENSIONS**

- Extensible cable support Patent  
[NASA-CASE-XMF-07587] c 15 N71-18701

**EXTENSOMETERS**

- Extensometer frame  
[NASA-CASE-XLA-10322] c 15 N72-17452  
Conductive elastomeric extensometer  
[NASA-CASE-MFS-21049-1] c 52 N74-27864  
Amplifying ribbon extensometer  
[NASA-CASE-LAR-11825-1] c 35 N77-22449  
Laser extensometer  
[NASA-CASE-MFS-19259-1] c 36 N78-14380  
Tensile testing apparatus  
[NASA-CASE-LAR-13243-1] c 35 N85-34375

**EXTERNAL COMBUSTION ENGINES**

- Hot gas engine with dual crankshafts  
[NASA-CASE-NPO-14221-1] c 37 N81-25370

**EXTERNAL STORE SEPARATION**

- Slide release mechanism --- for space shuttle orbiter/external tank connection device  
[NASA-CASE-MS-C-20080-1] c 37 N85-30334  
Remote pivot decoupler pylon: Wing/store flutter suppressor  
[NASA-CASE-LAR-13173-1] c 05 N87-14314

**EXTERNAL STORES**

- Decoupler pylon: wing/store flutter suppressor  
[NASA-CASE-LAR-12468-1] c 08 N82-32373

**EXTERNAL TANKS**

- Space Shuttle with rail system and aft thrust structure securing solid rocket boosters to external tank  
[NASA-CASE-MFS-25853-1] c 16 N84-27784  
Slide release mechanism --- for space shuttle orbiter/external tank connection device  
[NASA-CASE-MS-C-20080-1] c 37 N85-30334

**EXTRACTION**

- Liquid-gas separation system Patent  
[NASA-CASE-XMS-01624] c 15 N70-40062  
Chassis unit insert tightening-extract device  
[NASA-CASE-XMS-01077-1] c 37 N79-33467  
Supercritical solvent coal extraction  
[NASA-CASE-NPO-15210-1] c 25 N84-22709

**EXTRAVEHICULAR ACTIVITY**

- Portable environmental control system Patent  
[NASA-CASE-XMS-09632-1] c 05 N71-11203  
Hand-held self-maneuvering unit Patent  
[NASA-CASE-XMS-05304] c 05 N71-12336  
Serpentuator Patent  
[NASA-CASE-XMF-05344] c 31 N71-16345  
Fastener apparatus Patent  
[NASA-CASE-ARC-10140-1] c 15 N71-17653  
Extravehicular tunnel suit system Patent  
[NASA-CASE-MS-C-12243-1] c 05 N71-24728  
Life support system  
[NASA-CASE-MS-C-12411-1] c 05 N72-20096

- Space suit  
[NASA-CASE-MS-C-12609-1] c 05 N73-32012  
Absorbent product and articles made therefrom  
[NASA-CASE-MS-C-18223-2] c 54 N84-11758  
Suitport extra-vehicular access facility  
[NASA-CASE-ARC-11635-1] c 18 N90-16860

**EXTREMELY LOW RADIO FREQUENCIES**

- VHF/UHF parasitic probe antenna Patent  
[NASA-CASE-XKS-09340] c 07 N71-24614

**EXTRUDING**

- Extrusion can  
[NASA-CASE-NPO-10812] c 15 N73-13464  
Brazing alloy binder  
[NASA-CASE-XMF-05868] c 26 N75-27125  
Continuous coal processing method  
[NASA-CASE-NPO-13758-2] c 31 N81-15154

**EYE (ANATOMY)**

- Sight switch using an infrared source and sensor Patent  
[NASA-CASE-XMF-03934] c 09 N71-22985  
Ophthalmic method and apparatus  
[NASA-CASE-LEW-11669-1] c 05 N73-27062  
Corneal seal device  
[NASA-CASE-LEW-12258-1] c 52 N77-28716  
Intra-ocular pressure normalization technique and equipment  
[NASA-CASE-LEW-12723-1] c 52 N80-18690  
Chromatically corrected virtual image visual display --- reducing eye strain in flight simulators  
[NASA-CASE-LAR-12251-1] c 74 N80-27185  
Photorefractor ocular screening system  
[NASA-CASE-MFS-26011-1-SB] c 52 N87-24874

**EYE DISEASES**

- Photorefractor ocular screening system  
[NASA-CASE-MFS-26011-1-SB] c 52 N87-24874

**EYE EXAMINATIONS**

- Visual examination apparatus  
[NASA-CASE-ARC-10329-1] c 05 N73-26072  
Multiparameter vision testing apparatus  
[NASA-CASE-MS-C-13601-2] c 54 N75-27759  
Visual examination apparatus  
[US-PATENT-RE-28,921] c 52 N76-30793

**EYEPieces**

- Wide angle long eye relief eyepiece Patent  
[NASA-CASE-XMS-06056-1] c 23 N71-24857

**F****FABRICATION**

- Pressure variable capacitor  
[NASA-CASE-XNP-09752] c 14 N69-21541  
Method of making a regeneratively cooled combustion chamber Patent  
[NASA-CASE-XLE-00150] c 28 N70-41818  
Solar cell submodule Patent  
[NASA-CASE-XNP-05821] c 03 N71-11056  
Capacitor and method of making same Patent  
[NASA-CASE-LEW-10364-1] c 09 N71-13522  
Solar panel fabrication Patent  
[NASA-CASE-XNP-03413] c 03 N71-26726  
Method of forming a root cord restrained convolute section  
[NASA-CASE-MS-C-12398] c 05 N72-20098  
Method of removing insulated material from insulated wires  
[NASA-CASE-FRC-10038] c 15 N72-20444  
Thin film temperature sensor and method of making same  
[NASA-CASE-NPO-11775] c 26 N72-28761  
Fabrication of polycrystalline solar cells on low-cost substrates  
[NASA-CASE-GSC-12022-1] c 44 N76-28635  
Lightweight reflector assembly  
[NASA-CASE-NPO-13707-1] c 74 N77-28933  
Process for spinning flame retardant elastomeric compositions --- fabricating synthetic fibers for high oxygen environments  
[NASA-CASE-MS-C-14331-3] c 27 N78-32262  
Solar array strip and a method for forming the same  
[NASA-CASE-NPO-13652-1] c 44 N79-17314  
Method for fabricating solar cells having integrated collector grids  
[NASA-CASE-LEW-12819-2] c 44 N79-18444  
Bonding machine for forming a solar array strip  
[NASA-CASE-NPO-13652-2] c 44 N79-24431  
Method for forming a solar array strip  
[NASA-CASE-NPO-13652-3] c 44 N80-14474  
Induced junction solar cell and method of fabrication  
[NASA-CASE-NPO-13786-1] c 44 N80-29835  
Copper doped polycrystalline silicon solar cell  
[NASA-CASE-NPO-14670-1] c 44 N81-19558  
Heat exchanger and method of making  
[NASA-CASE-LEW-12441-3] c 44 N81-24519

- Photoelectric detection system — manufacturing automation  
[NASA-CASE-MFS-23776-1] c 33 N82-28545
- Method of fabricating Schottky Barrier solar cell  
[NASA-CASE-NPO-13689-4] c 44 N82-28780
- Advanced inorganic separators for alkaline batteries  
[NASA-CASE-LEW-13171-1] c 44 N82-29708
- Method of making a high voltage V-groove solar cell  
[NASA-CASE-LEW-13401-1] c 44 N82-29709
- Advanced inorganic separators for alkaline batteries and method of making the same  
[NASA-CASE-LEW-13171-2] c 44 N83-32176
- Resonant isolator for maser amplifier  
[NASA-CASE-NPO-15201-1] c 36 N83-35350
- Contactless pellet fabrication  
[NASA-CASE-NPO-15592-1] c 71 N84-16940
- Method of making a light weight battery plaque  
[NASA-CASE-LEW-13349-1] c 26 N84-22734
- High resistance and raised modulus carbon fibers  
[NASA-TM-76884] c 24 N85-25436
- GaAs Schottky barrier photo-responsive device and method of fabrication  
[NASA-CASE-GSC-12816-1] c 76 N86-20150
- Method of fabricating an imaging X-ray spectrometer  
[NASA-CASE-GSC-12956-1] c 35 N87-14671
- Nozzle fabrication technique  
[NASA-CASE-MSC-21299-1] c 20 N88-24684
- Method for Veterbi decoding of large constraint length convolutional codes  
[NASA-CASE-NPO-17310-1-CU] c 17 N88-28946
- Fabrication of nanometer single crystal metallic CoSi<sub>2</sub> structures on Si  
[NASA-CASE-NPO-17736-1-CU] c 76 N90-17455
- Miniature traveling wave tube and method of making  
[NASA-CASE-LEW-14520-1] c 33 N90-22724
- Multi-element spherical shell generation  
[NASA-CASE-NPO-17203-1-CU] c 34 N90-23700
- Metal chloride cathode for a battery  
[NASA-CASE-NPO-17809-1-CU] c 33 N90-27041
- FABRICS**
- Method of forming a root cord restrained convolute section  
[NASA-CASE-MSC-12398] c 05 N72-20098
- Amplifying ribbon extensometer  
[NASA-CASE-LAR-11825-1] c 35 N77-22449
- Nozzle extraction process and handmeter for measuring handle  
[NASA-CASE-LAR-12147-1] c 31 N79-11246
- Composition and method for making polyimide resin-reinforced fabric  
[NASA-CASE-LEW-12933-1] c 27 N81-18296
- Heat sealable, flame and abrasion resistant coated fabric — clothing and containers for space exploration  
[NASA-CASE-MSC-18382-1] c 27 N82-16238
- Adjustable high emittance gap filler — reentry shielding for space shuttle vehicles  
[NASA-CASE-ARC-11310-1] c 27 N82-24339
- Absorbent product to absorb fluids — for collection of human wastes  
[NASA-CASE-MSC-18223-1] c 24 N82-29362
- High temperature silicon carbide impregnated insulating fabrics  
[NASA-CASE-MSC-18382-1] c 27 N83-18908
- Heat sealable, flame and abrasion resistant coated fabric  
[NASA-CASE-MSC-18382-2] c 27 N84-14324
- Hot melt adhesive attachment pad  
[NASA-CASE-LAR-12694-1] c 27 N85-20125
- Tapered, tubular polyester fabric  
[NASA-CASE-MSC-21082-1] c 27 N87-29672
- Hazards protection for space suits and spacecraft  
[NASA-CASE-MSC-21366-1] c 54 N89-12206
- Smart tunnel: Docking mechanism  
[NASA-CASE-MSC-21360-1] c 18 N89-25263
- High temperature insulation barrier composite  
[NASA-CASE-MFS-29241-1] c 24 N90-23480
- Hazards protection for space suits and spacecraft  
[NASA-CASE-MSC-21366-1] c 54 N90-25498
- FABRY-PEROT INTERFEROMETERS**
- Retrodirective optical system  
[NASA-CASE-XGS-04480] c 16 N69-27491
- FACSIMILE COMMUNICATION**
- Facsimile video remodulation network  
[NASA-CASE-GSC-10185-1] c 07 N72-12081
- Spectrometer integrated with a facsimile camera  
[NASA-CASE-LAR-11207-1] c 35 N75-19613
- FACTORIAL DESIGN**
- Space suit pressure stabilizer Patent  
[NASA-CASE-XLA-05332] c 05 N71-11194
- Equipotential space suit Patent  
[NASA-CASE-LAR-10007-1] c 05 N71-11195
- FAIL-SAFE SYSTEMS**
- Failsafe multiple transformer circuit configuration  
[NASA-CASE-NPO-11078] c 09 N72-25262
- Latch mechanism  
[NASA-CASE-MSC-12549-1] c 37 N74-27903
- Safety flywheel — using flexible materials energy storage  
[NASA-CASE-HQN-10888-1] c 44 N79-14527
- Module failure isolation circuit for paralleled inverters — preventing system failure during power conditioning for spacecraft applications  
[NASA-CASE-NPO-14000-1] c 33 N79-24254
- Apparatus for sensor failure detection and correction in a gas turbine engine control system  
[NASA-CASE-LEW-12907-2] c 07 N81-19115
- Reconfiguring redundancy management  
[NASA-CASE-MSC-18498-1] c 60 N82-29013
- FAILURE**
- Double swivel toggle release  
[NASA-CASE-MSC-21436-1] c 37 N90-21390
- FAILURE ANALYSIS**
- Fatigue failure load indicator  
[NASA-CASE-LAR-12027-1] c 39 N79-22537
- Method and apparatus for transfer function simulator for testing complex systems  
[NASA-CASE-NPO-15696-1] c 33 N85-34333
- Delamination test apparatus and method  
[NASA-CASE-LAR-13985-1] c 24 N89-28586
- FAILURE MODES**
- High speed rolling element bearing  
[NASA-CASE-LEW-10856-1] c 15 N72-22490
- Inverter ratio failure detector  
[NASA-CASE-NPO-13160-1] c 35 N74-18090
- Method of inseting predesigned disbond areas into composite laminates  
[NASA-CASE-LAR-13225-1] c 24 N89-14258
- Discrete event simulation tool for analysis of qualitative models of continuous processing systems  
[NASA-CASE-MSC-21465-1] c 61 N90-16410
- Fatigue testing apparatus  
[NASA-CASE-LEW-14124-1] c 35 N90-23712
- FAIRINGS**
- Method and system for ejecting fairing sections from a rocket vehicle  
[NASA-CASE-GSC-10590-1] c 31 N73-14853
- Low-drag ground vehicle particularly suited for use in safely transporting livestock  
[NASA-CASE-FRC-11058-1] c 85 N82-33288
- FALLING SPHERES**
- Gravimeter Patent  
[NASA-CASE-XMF-05844] c 14 N71-17587
- FAR INFRARED RADIATION**
- Collimator of multiple plates with axially aligned identical random arrays of apertures  
[NASA-CASE-MFS-20546-2] c 14 N73-30389
- Method and means for generation of tunable laser sidebands in the far-infrared region  
[NASA-CASE-NPO-16497-1-CU] c 36 N87-25567
- Alternating gradient photodetector  
[NASA-CASE-NPO-17235-1-CU] c 35 N90-21358
- FAR ULTRAVIOLET RADIATION**
- Transient heat transfer gauge Patent  
[NASA-CASE-XNP-09802] c 33 N71-15641
- FARADAY EFFECT**
- Faraday rotation measurement method and apparatus  
[NASA-CASE-NPO-14839-1] c 35 N82-15381
- FAST FOURIER TRANSFORMATIONS**
- Pipelined digital SAR azimuth correlator using hybrid FFT-transversal filter  
[NASA-CASE-NPO-15519-1] c 32 N84-34651
- FASTENERS**
- Force measuring instrument Patent  
[NASA-CASE-XMF-00456] c 14 N70-34705
- Life preserver Patent  
[NASA-CASE-XMS-00864] c 05 N70-36493
- All-directional fastener Patent  
[NASA-CASE-XLA-01807] c 15 N71-10799
- Fastener apparatus Patent  
[NASA-CASE-ARC-10140-1] c 15 N71-17653
- Methods and apparatus employing vibratory energy for wrenching Patent  
[NASA-CASE-MFS-20586] c 15 N71-17686
- Coaxial cable connector Patent  
[NASA-CASE-XNP-04732] c 09 N71-20851
- Latching mechanism Patent  
[NASA-CASE-XMS-03745] c 15 N71-21076
- Central spar and module joint Patent  
[NASA-CASE-XNP-02341] c 15 N71-21531
- Threadless fastener apparatus Patent  
[NASA-CASE-XFR-05302] c 15 N71-23254
- Flexibly connected support and skin Patent  
[NASA-CASE-XLA-01027] c 31 N71-24035
- Quick release hook tape Patent  
[NASA-CASE-XMS-10660-1] c 15 N71-25975
- Helmet latching and attaching ring  
[NASA-CASE-XMS-04670] c 54 N78-17678
- Chassis unit insert tightening-extract device  
[NASA-CASE-XMS-01077-1] c 37 N79-33467
- One-step dual purpose joining technique  
[NASA-CASE-LAR-12595-1] c 33 N82-26571
- Reusable captive blind fastener  
[NASA-CASE-MSC-18742-1] c 37 N82-26673
- Daze fasteners  
[NASA-CASE-LAR-13009-1] c 37 N85-29285
- Mechanical fastener  
[NASA-CASE-LAR-12738-2] c 37 N85-30335
- Daze fasteners  
[NASA-CASE-LAR-13009-2] c 37 N87-22976
- Toggle release  
[NASA-CASE-MSC-21354-1] c 37 N88-24969
- Double swivel toggle release  
[NASA-CASE-MSC-21436-1] c 37 N90-21390
- Overcenter collet space station truss fastener  
[NASA-CASE-MSC-21504-1] c 18 N90-26859
- Braided composite fasteners and method for producing same  
[NASA-CASE-LAR-14062-1] c 37 N90-27114
- FATIGUE (MATERIALS)**
- Strain coupled servo control system Patent  
[NASA-CASE-XLA-08530] c 32 N71-25360
- TV fatigue crack monitoring system  
[NASA-CASE-LAR-11490-1] c 39 N78-16387
- FATIGUE LIFE**
- Fatigue-resistant shear pin  
[NASA-CASE-XLA-09122] c 15 N69-27505
- Method of improving the reliability of a rolling element system Patent  
[NASA-CASE-XLE-02999] c 15 N71-16052
- High speed rolling element bearing  
[NASA-CASE-LEW-10856-1] c 15 N72-22490
- High speed hybrid bearing comprising a fluid bearing and a rolling bearing convected in series  
[NASA-CASE-LEW-11152-1] c 15 N73-32359
- Machine for use in monitoring fatigue life for a plurality of elastomeric specimens  
[NASA-CASE-NPO-13731-1] c 39 N78-10493
- FATIGUE TESTING MACHINES**
- Horizontal cryostat for fatigue testing Patent  
[NASA-CASE-XMF-10968] c 14 N71-24234
- Light shield and infrared reflector for fatigue testing Patent  
[NASA-CASE-XLA-01782] c 14 N71-26136
- Fatigue testing a plurality of test specimens and method  
[NASA-CASE-MFS-28118-1] c 39 N87-25601
- FATIGUE TESTS**
- Fatigue testing device Patent  
[NASA-CASE-XLA-02131] c 32 N70-42003
- Fatigue failure load indicator  
[NASA-CASE-LAR-12027-1] c 39 N79-22537
- Heating and cooling system — for fatigue test specimens  
[NASA-CASE-LAR-12393-1] c 34 N83-34221
- Furnace for tensile/fatigue testing  
[NASA-CASE-LEW-14848-1] c 14 N89-28549
- Fatigue testing apparatus  
[NASA-CASE-LEW-14124-1] c 35 N90-23712
- FATS**
- Oil and fat absorbing polymers  
[NASA-CASE-NPO-11609-2] c 27 N77-31308
- FAULT TOLERANCE**
- Toggle release  
[NASA-CASE-MSC-21354-1] c 37 N88-24969
- Double swivel toggle release  
[NASA-CASE-MSC-21436-1] c 37 N90-21390
- Fault tolerant hypercube computer system architecture  
[NASA-CASE-NPO-16859-1-CU] c 60 N90-21527
- Self-checking on-line testable static RAM  
[NASA-CASE-NPO-17939-1-CU] c 60 N90-26518
- FECES**
- Relief container  
[NASA-CASE-XMS-06761] c 05 N69-23192
- Improved method and apparatus for waste collection and storage  
[NASA-CASE-MSC-21025-1] c 31 N87-25495
- FEED SYSTEMS**
- Plasma device feed system Patent  
[NASA-CASE-XLE-02902] c 25 N71-21694
- Propellant tank pressurization system Patent  
[NASA-CASE-XNP-00650] c 27 N71-28929
- Liquid waste feed system  
[NASA-CASE-LAR-10365-1] c 05 N72-27102
- Pressurized lighting system  
[NASA-CASE-KSC-10644] c 09 N72-27227
- Dual frequency microwave reflex feed  
[NASA-CASE-NPO-13091-1] c 09 N73-12214
- Injector for use in high voltage isolators for liquid feed lines  
[NASA-CASE-NPO-11377] c 15 N73-27406
- Supercharged topping rocket propellant feed system  
[NASA-CASE-XLE-02062-1] c 20 N80-14188
- Method of producing silicon — gas phase reactor multiple injector liquid feed system  
[NASA-CASE-NPO-14382-1] c 31 N80-18231
- Continuous coal processing method  
[NASA-CASE-NPO-13758-2] c 31 N81-15154

Constant-output atomizer --- Inhalation therapy and aerosol research  
[NASA-CASE-MFS-25631-1] c 34 N84-12406

**FEEDBACK**

Active RC networks  
[NASA-CASE-ARC-10020] c 10 N72-17172

Feedback shift register with states decomposed into cycles of equal length  
[NASA-CASE-NPO-11082] c 08 N72-22167

Inverter oscillator with voltage feedback  
[NASA-CASE-NPO-10760] c 09 N72-25254

**FEEDBACK AMPLIFIERS**

Radiometric temperature reference Patent  
[NASA-CASE-MSC-13276-1] c 14 N71-27058

Compensating bandwidth switching transients in an amplifier circuit Patent  
[NASA-CASE-XNP-01107] c 10 N71-28859

Monostable multivibrator with complementary NOR gates Patent  
[NASA-CASE-MSC-13492-1] c 10 N71-28860

**FEEDBACK CIRCUITS**

Low power drain semi-conductor circuit  
[NASA-CASE-XGS-04999] c 09 N69-24317

Linear three-tap feedback shift register Patent  
[NASA-CASE-NPO-10351] c 08 N71-12503

Frequency control network for a current feedback oscillator Patent  
[NASA-CASE-GSC-10041-1] c 10 N71-19418

Feedback integrator with grounded capacitor Patent  
[NASA-CASE-XAC-10607] c 10 N71-23669

Parametric amplifiers with idler circuit feedback  
[NASA-CASE-LAR-10253-1] c 09 N72-25258

Pseudonoise sequence generators with three tap linear feedback shift registers  
[NASA-CASE-NPO-11406] c 08 N73-12175

Logarithmic circuit with wide dynamic range  
[NASA-CASE-GSC-12145-1] c 33 N78-32339

Automatic level control circuit  
[NASA-CASE-KSC-11170-1] c 33 N83-36356

**FEEDBACK CONTROL**

Nonlinear analog-to-digital converter Patent  
[NASA-CASE-XAC-04031] c 08 N71-18594

Pulse-type magnetic core memory element circuit with blocking oscillator feedback Patent  
[NASA-CASE-XGS-03303] c 08 N71-18595

BCD to decimal decoder Patent  
[NASA-CASE-XKS-06167] c 08 N71-24890

A dc motor speed control system Patent  
[NASA-CASE-MFS-14610] c 09 N71-28886

Sampled data controller Patent  
[NASA-CASE-GSC-10554-1] c 08 N71-29033

A dc servosystem including an ac motor Patent  
[NASA-CASE-NPO-10700] c 07 N71-33613

Suppression of flutter  
[NASA-CASE-LAR-10682-1] c 02 N73-26004

Regulated dc-to-dc converter for voltage step-up or step-down with input-output isolation  
[NASA-CASE-HQN-10792-1] c 33 N74-11049

Diffused waveguiding capillary tube with distributed feedback for a gas laser  
[NASA-CASE-NPO-13544-1] c 36 N76-18428

The dc-to-dc converters employing staggered-phase power switches with two-loop control  
[NASA-CASE-NPO-13512-1] c 33 N77-10428

System and method for tracking a signal source --- employing feedback control  
[NASA-CASE-HQN-10880-1] c 17 N78-17140

Closed loop spray cooling apparatus --- for particle accelerator targets  
[NASA-CASE-LEW-11981-1] c 31 N78-17237

Wide power range microwave feedback controller  
[NASA-CASE-GSC-12146-1] c 33 N78-32340

Active notch filter network with variable notch depth, width and frequency  
[NASA-CASE-FRC-11055-1] c 33 N80-29583

Variable speed drive  
[NASA-CASE-GSC-12643-1] c 37 N83-26078

Tuned analog network  
[NASA-CASE-GSC-12650-1] c 33 N84-14421

Three phase power factor controller  
[NASA-CASE-MFS-25535-2] c 33 N84-22885

Three-phase power factor controller with induced EMF sensing  
[NASA-CASE-MFS-25852-1] c 33 N84-33661

Closed loop electrostatic levitation system  
[NASA-CASE-NPO-15553-1] c 33 N85-29142

Method and apparatus for transfer function simulator for testing complex systems  
[NASA-CASE-NPO-15696-1] c 33 N85-34333

Closed loop fiber optic rotation sensor  
[NASA-CASE-NPO-16558-1-CU] c 74 N87-23259

Spiral vane bioreactor  
[NASA-CASE-MSC-21361-1] c 51 N89-25557

Permanent magnet flux-biased magnetic actuator with flux feedback  
[NASA-CASE-LAR-13785-1] c 70 N90-17403

Balanced bridge feedback control system  
[NASA-CASE-NPO-17430-1-CU] c 33 N90-21951

Closed-loop autonomous docking system  
[NASA-CASE-MFS-28421-1] c 18 N90-26861

Heat exchanger with oscillating flow  
[NASA-CASE-LAR-14033-1] c 34 N90-27072

**FEEDBACK FREQUENCY MODULATION**

Means for communicating through a layer of ionized gases Patent  
[NASA-CASE-XLA-01127] c 07 N70-41372

Data-aided carrier tracking loops  
[NASA-CASE-NPO-11282] c 10 N73-16205

Linear phase demodulator including a phase locked loop with auxiliary feedback loop  
[NASA-CASE-GSC-12018-1] c 33 N77-14334

**FEEDERS**

Automatic real-time pair-feeding system for animals  
[NASA-CASE-ARC-10302-1] c 51 N74-15778

Plasma gun with coaxial powder feed and adjustable cathode  
[NASA-CASE-LEW-14901-1] c 75 N90-10718

**FEEDFORWARD CONTROL**

Analog hardware for learning neural networks  
[NASA-CASE-NPO-17664-1-CU] c 62 N90-27384

**FEET (ANATOMY)**

Drop foot corrective device  
[NASA-CASE-LAR-12258-2] c 54 N86-22112

**FELTS**

Thermal insulation attaching means --- adhesive bonding of felt vibration insulators under ceramic tiles  
[NASA-CASE-MSC-12619-2] c 27 N79-12221

**FEMALES**

Liquid cooled brassiere and method of diagnosing malignant tumors therewith  
[NASA-CASE-ARC-11007-1] c 52 N77-14736

Urine collection apparatus --- feminine hygiene  
[NASA-CASE-MSC-18381-1] c 52 N81-28740

**FERMENTATION**

Production of butanol by fermentation in the presence of cocultures of clostridium  
[NASA-CASE-NPO-16203-1] c 23 N85-35227

**FERRITES**

Magnetic recording head and method of making same Patent  
[NASA-CASE-GSC-10097-1] c 08 N71-27210

Method for making conductors for ferrite memory arrays --- from pre-formed metal conductors  
[NASA-CASE-LAR-10994-1] c 24 N75-13032

Device for measuring the ferrite content in an austenitic stainless-steel weld  
[NASA-CASE-MFS-22907-1] c 26 N76-18257

**FERROFLUIDS**

Linear motion valve  
[NASA-CASE-MSC-20148-1] c 37 N85-29284

**FERROMAGNETIC FILMS**

High speed magneto-resistive random access memory  
[NASA-CASE-NPO-17954-1-CU] c 60 N90-26519

**FERROMAGNETIC MATERIALS**

Magnetic heat pumping  
[NASA-CASE-LEW-12508-1] c 34 N78-17335

**FERROMAGNETISM**

High temperature ferromagnetic cobalt-base alloy Patent  
[NASA-CASE-XLE-03629] c 17 N71-23248

**FIBER COMPOSITES**

Fibrous refractory composite insulation --- shielding reusable spacecraft  
[NASA-CASE-ARC-11169-1] c 24 N79-24062

Composition and method for making polyimide resin-reinforced fabric  
[NASA-CASE-LEW-12933-1] c 27 N81-19296

Fuselage structure using advanced technology fiber reinforced composites  
[NASA-CASE-LAR-11688-1] c 24 N82-26384

Low temperature cross linking polyimides  
[NASA-CASE-LEW-12876-2] c 27 N83-29392

Mixed polyvalent-monovalent metal coating for carbon-graphite fibers  
[NASA-CASE-NPO-14987-1] c 24 N83-33950

Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-3] c 27 N84-22745

Method and apparatus for gripping uniaxial fibrous composite materials  
[NASA-CASE-LEW-13758-1] c 24 N84-27829

Curved cap corrugated sheet  
[NASA-CASE-LAR-12884-1] c 18 N84-33450

Arc spray fabrication of metal matrix composite monolayer  
[NASA-CASE-LEW-13828-1] c 24 N85-30027

Toughening reinforced epoxy composites with brominated polymeric additives  
[NASA-CASE-ARC-11427-2] c 27 N88-27451

Light weight fire resistant graphite composites  
[US-PATENT-4,598,007] c 24 N86-28131

Seamless metal-clad fiber-reinforced organic matrix composite structures and process for their manufacture  
[NASA-CASE-LAR-13562-1] c 24 N87-18613

Method of preparing fiber reinforced ceramic material  
[NASA-CASE-LEW-14392-1] c 27 N87-28656

Pultrusion die assembly  
[NASA-CASE-LAR-13719-1] c 37 N89-12867

Light weight polymer matrix composite material  
[NASA-CASE-LEW-14734-1] c 24 N89-23623

Fiber reinforced ceramic material  
[NASA-CASE-LEW-14392-2] c 27 N89-29538

Method of controlling a resin curing process --- for fiber reinforced composites  
[NASA-CASE-MSC-21169-1] c 27 N89-29539

Seamless metal-clad fiber-reinforced organic matrix composite structures and process for their manufacture  
[NASA-CASE-LAR-13562-1] c 24 N90-25196

**FIBER OPTICS**

Fiber optic vibration transducer and analyzer Patent  
[NASA-CASE-XMF-02433] c 14 N71-10616

Fiber distributed feedback laser  
[NASA-CASE-NPO-13531-1] c 36 N76-24553

Fiber optic multiplex optical transmission system  
[NASA-CASE-KSC-11047-1] c 74 N78-14889

Low intensity X-ray and gamma-ray imaging device --- fiber optics  
[NASA-CASE-GSC-12263-1] c 74 N79-20857

Precise RF timing signal distribution to remote stations --- fiber optics  
[NASA-CASE-NPO-14749-1] c 32 N81-14186

Interleaving device  
[NASA-CASE-GSC-12111-2] c 33 N81-29342

Optical gyroscope system  
[NASA-CASE-NPO-14258-1] c 35 N81-33448

Fiber optic transmission line stabilization apparatus and method  
[NASA-CASE-NPO-15036-1] c 74 N82-19029

Optical crystal temperature gauge with fiber optic connections  
[NASA-CASE-MSC-18627-1] c 74 N82-30071

Low intensity X-ray and gamma-ray spectrometer  
[NASA-CASE-GSC-12587-1] c 35 N82-32659

Fiber optic crossbar switch for automatically patching optical signals  
[NASA-CASE-KSC-11104-1] c 74 N83-29032

Optical fiber tactile sensor  
[NASA-CASE-NPO-15375-1] c 74 N84-11921

Laser pulse detection method and apparatus  
[NASA-CASE-NPO-16030-1] c 36 N84-25037

Optical fiber coupling method and apparatus  
[NASA-CASE-NPO-15464-1] c 74 N85-29749

Closed loop fiber optic rotation sensor  
[NASA-CASE-NPO-16558-1-CU] c 74 N87-23259

Low-loss, high-isolation, fiber-optic isolator  
[NASA-CASE-NPO-17207-1-CU] c 74 N88-25304

Optical pressure sealing coupling apparatus  
[NASA-CASE-MFS-29348-1] c 74 N89-25689

Fiber optic frequency transfer link  
[NASA-CASE-NPO-17703-1-CU] c 74 N89-29191

Fiber optic sensing system  
[NASA-CASE-LEW-14795-1] c 74 N90-15733

Optical shutter switching matrix  
[NASA-CASE-KSC-11392-1] c 74 N90-22383

Method and apparatus for determining optical absorption and emission characteristics of a crystal or non-crystalline fiber  
[NASA-CASE-LAR-13963-1] c 76 N90-24150

**FIBER RELEASE**

Curing agent for polyepoxides and epoxy resins and composites cured therewith --- preventing carbon fiber release  
[NASA-CASE-LEW-13226-1] c 27 N81-17260

Method and device for detection of a substance --- determining carbon fiber release in fire situations  
[NASA-CASE-NPO-14940-1] c 33 N83-31954

**FIBER STRENGTH**

High resistance and raised modulus carbon fibers  
[NASA-TM-76884] c 24 N85-25436

**FIBERS**

Method for fiberizing ceramic materials Patent  
[NASA-CASE-XNP-00597] c 18 N71-23088

Method and apparatus for fluffing, separating, and cleaning fibers  
[NASA-CASE-LAR-11224-1] c 37 N76-18456

Composite lamination method  
[NASA-CASE-LAR-12019-1] c 24 N78-17150

Dual membrane hollow fiber fuel cell and method of operating same  
[NASA-CASE-NPO-13732-1] c 44 N79-10513

Ion-exchange hollow fibers  
[NASA-CASE-NPO-13309-1] c 25 N81-19244

A method and technique for installing light-weight fragile, high-temperature fiber insulation  
[NASA-CASE-MSC-18934-3] c 24 N82-26387

Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-3] c 27 N84-22745

Graphite fluoride fiber polymer composite material  
[NASA-CASE-LEW-14472-1] c 24 N89-14259  
Hollow fiber diostat: Technical abstract  
[NASA-CASE-MFS-28370-1] c 35 N89-28793

**FIELD EFFECT TRANSISTORS**

Frequency to analog converter Patent  
[NASA-CASE-XNP-07040] c 08 N71-12500  
Voltage to frequency converter Patent  
[NASA-CASE-GSC-10022-1] c 10 N71-25882  
Broadband video process with very high input impedance  
[NASA-CASE-NPO-10199] c 09 N72-17156  
Data multiplexer using tree switching configuration  
[NASA-CASE-NPO-11333] c 08 N72-22162  
Integrated circuit including field effect transistor and cermet resistor  
[NASA-CASE-GSC-10835-1] c 09 N72-33205  
Radiation hardening of MOS devices by boron — for stabilizing gate threshold potential of field effect device  
[NASA-CASE-GSC-11425-1] c 76 N74-20329  
Stored charge transistor  
[NASA-CASE-NPO-11156-2] c 33 N75-31331  
Field effect transistor and method of construction thereof  
[NASA-CASE-MFS-23312-1] c 33 N78-27326  
Method of making V-MOS field effect transistors utilizing a two-step anisotropic etching and ion implantation  
[NASA-CASE-GSC-12515-1] c 33 N81-26360  
CCD correlated quadruple sampling processor  
[NASA-CASE-NPO-14426-1] c 33 N81-27396  
Electronic system for high power load control — solar arrays  
[NASA-CASE-NPO-15358-1] c 33 N83-27126  
JFET reflection oscillator  
[NASA-CASE-GSC-12555-1] c 33 N86-19515  
Hybrid power semiconductor  
[NASA-CASE-LEW-13922-1] c 33 N86-20672  
FET charge sensor and voltage probe  
[NASA-CASE-NPO-16045-1] c 76 N87-13313  
Microwave field effect transistor  
[NASA-CASE-GSC-12442-2] c 33 N90-20282

**FIELD EMISSION**

Method and apparatus for limiting field emission current  
[NASA-CASE-ERC-10015-2] c 10 N72-27246  
Apparatus for mounting a field emission cathode  
[NASA-CASE-LEW-14108-1] c 33 N87-28832

**FIELD OF VIEW**

Scanner — photography from a spin stabilized synchronous satellite  
[NASA-CASE-GSC-12032-2] c 43 N82-13465  
Focal plane array optical proximity sensor  
[NASA-CASE-NPO-15155-1] c 74 N85-22139  
A compact fast wide angle broad band spectrometer optical system  
[NASA-CASE-NPO-17562-1-CU] c 74 N89-24153

**FILAMENT WINDING**

Tool attachment for spreading loose elements away from work Patent  
[NASA-CASE-XMF-02107] c 15 N71-10809  
Method of making a filament-wound container Patent  
[NASA-CASE-XLE-03803-2] c 15 N71-17651  
Method of fabricating a twisted composite superconductor  
[NASA-CASE-LEW-11015] c 26 N73-32571  
Method of making reinforced composite structure  
[NASA-CASE-LEW-12619-1] c 24 N77-19171

**FILAMENTS**

Radiant heater having formed filaments Patent  
[NASA-CASE-XLE-00387] c 33 N70-34812  
Twisted multifilament superconductor  
[NASA-CASE-LEW-11726-1] c 26 N73-26752

**FILLERS**

Method for making a heat insulating and ablative structure  
[NASA-CASE-XMS-01108] c 15 N69-24322  
Intumescent-ablator coatings using endothermic fillers  
[NASA-CASE-ARC-11043-1] c 24 N78-27180  
Polymeric compositions and their method of manufacture — forming filled polymer systems using cryogenics  
[NASA-CASE-NPO-10424-1] c 27 N81-24258  
Polyvinyl alcohol battery separator containing inert filler — alkaline batteries  
[NASA-CASE-LEW-13556-1] c 44 N81-27615  
Adjustable high emittance gap filler — reentry shielding for space shuttle vehicles  
[NASA-CASE-ARC-11310-1] c 27 N82-24339  
Multi-element spherical shell generation  
[NASA-CASE-NPO-17203-1-CU] c 34 N90-23700

**FILLING**

Rapidly quantifying the relative distention of a human bladder  
[NASA-CASE-LAR-13901-1-NP] c 52 N90-21519

**FILM COOLING**

Multislot film cooled pyrolytic graphite rocket nozzle Patent  
[NASA-CASE-XNP-04389] c 28 N71-20942  
Curved film cooling admission tube  
[NASA-CASE-LEW-13174-1] c 34 N83-27144  
Covering solid, film cooled surfaces with a duplex thermal barrier coating  
[NASA-CASE-LEW-13450-1] c 31 N83-35177  
Vortex generating flow passage design for increased film cooling effectiveness  
[NASA-CASE-LEW-14039-1] c 34 N85-33433

**FILM THICKNESS**

Chemical vapor deposition reactor — providing uniform film thickness  
[NASA-CASE-NPO-13650-1] c 25 N78-28253  
Dual-beam skin friction interferometer  
[NASA-CASE-ARC-11354-1] c 74 N83-21949  
Degassing and mixing apparatus for liquids — potable water for spacecraft  
[NASA-CASE-MSC-18936-1] c 35 N83-29652  
Epitaxial thinning process  
[NASA-CASE-NPO-15786-1] c 76 N84-35112

**FILMS**

Apparatus for obtaining isotropic irradiation of a specimen  
[NASA-CASE-MFS-20095] c 24 N72-11595  
Method and apparatus for measurement of trap density and energy distribution in dielectric films  
[NASA-CASE-NPO-13443-1] c 76 N76-20994

**FILTERS**

Filter system for control of outgas contamination in vacuum Patent  
[NASA-CASE-MFS-14711] c 15 N71-26185  
Method for removing oxygen impurities from cesium Patent  
[NASA-CASE-XNP-04262-2] c 17 N71-26773  
Centrifugal lyophobic separator  
[NASA-CASE-LAR-10194-1] c 34 N74-30608

**FILTRATION**

Recovery of aluminum from composite propellants  
[NASA-CASE-NPO-14110-1] c 28 N81-15119  
Method for treating wastewater using microorganisms and vascular aquatic plants  
[NASA-CASE-NSTL-10] c 45 N84-12654  
Acoustic agglomeration methods and apparatus  
[NASA-CASE-NPO-15466-1] c 71 N85-22104  
Infusion extractor  
[NASA-CASE-MSC-20761-1] c 37 N87-15465  
Sample holder support for microscopes  
[NASA-CASE-MFS-28420-1] c 37 N90-27113

**FINGERS**

Rotationally actuated prosthetic helping hand  
[NASA-CASE-MFS-28426-1] c 54 N90-27261

**FINS**

Thrust and direction control apparatus Patent  
[NASA-CASE-XLE-03583] c 31 N71-17629  
Deployable flexible ventral fins for use as an emergency spin recovery device in aircraft  
[NASA-CASE-LAR-10753-1] c 08 N74-30421

**FIRE EXTINGUISHERS**

Fire extinguishing apparatus having a slidable mass for a penetrator nozzle — for penetrating aircraft and shuttle orbiter skin  
[NASA-CASE-KSC-11064-1] c 31 N81-14137  
Synthesis of dawsonites — for use in fire extinguishing operations  
[NASA-CASE-ARC-11326-1] c 25 N83-33977  
Fire extinguishing materials  
[NASA-CASE-ARC-11252-1] c 25 N83-36118

**FIRE PREVENTION**

Hydrogen fire blink detector  
[NASA-CASE-MFS-15063] c 14 N72-25412  
Method and apparatus for checking fire detectors  
[NASA-CASE-GSC-11600-1] c 35 N74-21019  
Fire resistant polyamide based on 1-(diorganoxyphosphonyl)methyl-2,4- and -2,6-diamino benzene  
[NASA-CASE-ARC-11512-2] c 27 N86-32568

**FIREPROOFING**

Fire resistant coating composition Patent  
[NASA-CASE-GSC-10072] c 18 N71-14014  
Intumescent paint containing nitrile rubber  
[NASA-CASE-ARC-10196-1] c 18 N73-13562  
Intumescent composition, foamed product prepared therewith, and process for making same  
[NASA-CASE-ARC-10304-1] c 18 N73-26572  
Flexible fire retardant polyisocyanate modified neoprene foam — for thermal protective devices  
[NASA-CASE-ARC-10180-1] c 27 N74-12814  
Non-flammable elastomeric fiber from a fluorinated elastomer and containing an halogenated flame retardant  
[NASA-CASE-MSC-14331-1] c 27 N76-24405  
Flame retardant spandex type polyurethanes  
[NASA-CASE-MSC-14331-2] c 27 N78-17213

Fire protection covering for small diameter missiles  
[NASA-CASE-ARC-11104-1] c 15 N79-26100

**FIRES**

Combustion products generating and metering device  
[NASA-CASE-GSC-11095-1] c 14 N72-10375  
Hydrogen fire detection system with logic circuit to analyze the spectrum of temporal variations of the optical spectrum  
[NASA-CASE-MFS-13130] c 10 N72-17173

**FIRING (IGNITING)**

Separation nut Patent  
[NASA-CASE-XGS-01971] c 15 N71-15922

**FITTINGS**

Quick release connector Patent  
[NASA-CASE-XLA-01141] c 15 N71-13789  
Flared tube strainer  
[NASA-CASE-XLA-05056] c 15 N72-11389  
Apparatus for adapting an end effector device remotely controlled manipulator arm  
[NASA-CASE-MFS-25949-1] c 37 N86-19603  
Self indexing latch system  
[NASA-CASE-MFS-25956-1] c 37 N87-21333  
Expandable pallet for space station interface attachments  
[NASA-CASE-MSC-21117-1] c 18 N88-28958

**FIXED WINGS**

Supersonic aircraft Patent  
[NASA-CASE-XLA-04451] c 02 N71-12243

**FIXTURES**

Tool for use in lifting pin supported objects  
[NASA-CASE-NPO-13157-1] c 37 N74-32918  
Apparatus for positioning modular components on a vertical or overhead surface  
[NASA-CASE-LAR-11465-1] c 37 N76-21554  
Heat treat fixture and method of heat treating  
[NASA-CASE-LAR-11821-1] c 26 N80-28492  
Fixture for environmental exposure of structural materials under compression load  
[NASA-CASE-LAR-12602-1] c 39 N83-32081

**FLAME PROBES**

Flame detector operable in presence of proton radiation  
[NASA-CASE-MFS-21577-1] c 19 N74-29410

**FLAME RETARDANTS**

Flame retardant spandex type polyurethanes  
[NASA-CASE-MSC-14331-2] c 27 N78-17213  
Process for spinning flame retardant elastomeric compositions — fabricating synthetic fibers for high oxygen environments  
[NASA-CASE-MSC-14331-3] c 27 N78-32262  
Catalysts for polyimide foams from aromatic isocyanates and aromatic dianhydrides — flame retardant foams  
[NASA-CASE-ARC-11107-1] c 25 N80-16116  
Crystalline polyimides — reinforcing fibers for high temperature composites and adhesives as well as flame retardation  
[NASA-CASE-LAR-12099-1] c 27 N80-16158  
Heat resistant polymers of oxidized styrylphosphine  
[NASA-CASE-MSC-14903-3] c 27 N80-24438  
Structural wood panels with improved fire resistance  
[NASA-CASE-ARC-11174-1] c 24 N81-13999  
Heat sealable, flame and abrasion resistant coated fabric — clothing and containers for space exploration  
[NASA-CASE-MSC-18382-1] c 27 N82-16238  
Elastomer coated filler and composites thereof comprising at least 60% by weight of a hydrated filler and an elastomer containing an acid substituent  
[NASA-CASE-NPO-14857-1] c 27 N83-19900  
Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-1] c 27 N83-31854  
Heat sealable, flame and abrasion resistant coated fabric  
[NASA-CASE-MSC-18382-2] c 27 N84-14324  
Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-3] c 27 N84-22745  
Fire blocking systems for aircraft seat cushions  
[NASA-CASE-ARC-11423-1] c 03 N84-33394  
Segmented tubular cushion springs and spring assembly  
[NASA-CASE-ARC-11349-1] c 37 N86-20797  
Polymer of phosphonyl(methyl)-2,4- and -2,6-diamino benzene and polyfunctional monomer  
[NASA-CASE-ARC-11506-2] c 23 N86-32525  
Fire and heat resistant laminating resins based on maleimido and citraconimido substituted 1-(diorgano oxyphosphonyl) methyl -2,4- and -2,6- diaminobenzenes  
[NASA-CASE-ARC-11533-3] c 27 N87-24564  
The 1-(diorgano oxy phosphonyl) methyl-2,4- and -2,6-diamino benzenes and their derivatives  
[NASA-CASE-ARC-11425-2] c 23 N87-28605  
Fire and heat resistant laminating resin based on maleimido and citraconimido substituted 1-(diorgano oxyphosphonyl-methyl)-2,4- and -2,6-diaminobenzenes  
[NASA-CASE-ARC-11533-2] c 27 N89-16042



## FLAME SPRAYING

- Method of coating carbonaceous base to prevent oxidation destruction and coated base Patent  
[NASA-CASE-XLA-00302] c 15 N71-16077
- Modified polyurethane foams for fuel-fire Patent  
[NASA-CASE-ARC-10098-1] c 06 N71-24739
- Method of making pressure tight seal for super alloy  
[NASA-CASE-LAR-10170-1] c 37 N74-11301
- Thermal barrier coating system  
[NASA-CASE-LEW-14057-1] c 24 N85-35233

## FLAME TEMPERATURE

- Direct heating surface combustor  
[NASA-CASE-LEW-11877-1] c 34 N78-27357

## FLAMES

- Temperature reducing coating for metals subject to flame exposure Patent  
[NASA-CASE-XLE-00035] c 33 N71-29151
- Modulated hydrogen ion flame detector  
[NASA-CASE-ARC-10322-1] c 35 N76-18403

## FLAMMABILITY

- Flammability test chamber Patent  
[NASA-CASE-KSC-10126] c 11 N71-24985
- Burn rate testing apparatus  
[NASA-CASE-XMS-09690] c 33 N72-25913
- Compound oxidized styrylphosphine — flame resistant vinyl polymers  
[NASA-CASE-MS-C-14903-2] c 27 N80-10358
- Vitro-violet process for producing flame resistant polyamides and products produced thereby — protective clothing for high oxygen environments  
[NASA-CASE-MS-C-16074-1] c 27 N80-26446
- Light weight fire resistant graphite composites  
[US-PATENT-4,598,007] c 24 N86-28131
- Fire and heat resistant laminating resins based on maleimido substituted aromatic cyclotriphosphazene polymer  
[NASA-CASE-ARC-11428-2] c 27 N87-16909
- Ignitability test method and apparatus  
[NASA-CASE-LAR-13998-1-SB] c 25 N90-15161

## FLANGES

- Cassegrainian antenna subreflector flange for suppressing ground noise Patent  
[NASA-CASE-XNP-00683] c 09 N70-35425
- Anti-glare improvement for optical imaging systems Patent  
[NASA-CASE-NPO-10337] c 14 N71-15604
- Flanged major modular assembly jig  
[NASA-CASE-MS-C-19372-1] c 39 N76-31562
- Quick connect coupling  
[NASA-CASE-MS-C-21539-1] c 37 N90-27111

## FLAPS (CONTROL SURFACES)

- Jet aircraft configuration Patent  
[NASA-CASE-XLA-00087] c 02 N70-33332
- Assembly for recovering a capsule Patent  
[NASA-CASE-XMF-00641] c 31 N70-36410
- Direct lift control system Patent  
[NASA-CASE-LAR-10249-1] c 02 N71-26110
- Reversed cowl flap inlet thrust augmentor — with adjustable airfoil  
[NASA-CASE-ARC-10754-1] c 07 N75-24736

## FLARED BODIES

- Flared tube strainer  
[NASA-CASE-XLA-05056] c 15 N72-11389

## FLASH LAMPS

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- System for providing an integrated display of instantaneous information relative to aircraft attitude, heading, altitude, and horizontal situation  
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- Solid state controller three axes controller  
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- Vehicle simulator binocular multiplanar visual display system  
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Pneumatic system for controlling and actuating pneumatic cyclic devices  
[NASA-CASE-XMS-04843] c 03 N69-21469  
Full flow with shut off and selective drainage control valve Patent application  
[NASA-CASE-ERC-10208] c 15 N70-10867  
Conical valve plug Patent  
[NASA-CASE-XLE-00715] c 15 N70-34859  
Pressure regulating system Patent  
[NASA-CASE-XNP-00450] c 15 N70-38603  
Antiflutter ball check valve Patent  
[NASA-CASE-XNP-01152] c 15 N70-41811  
Inductive liquid level detection system Patent  
[NASA-CASE-XLE-01609] c 14 N71-10500  
Multway vortex valve system Patent  
[NASA-CASE-XMF-04709] c 15 N71-15609  
Heated element fluid flow sensor Patent  
[NASA-CASE-MSC-12084-1] c 12 N71-17569  
Multiple orifice throttle valve Patent  
[NASA-CASE-XNP-09698] c 15 N71-18580  
Fluid flow meter with comparator reference means Patent  
[NASA-CASE-XGS-01331] c 14 N71-22996  
Pressure transducer calibrator Patent  
[NASA-CASE-XNP-01660] c 14 N71-23036  
Dual latching solenoid valve Patent  
[NASA-CASE-XMS-05890] c 09 N71-23191  
Gas low pressure low flow rate metering system Patent  
[NASA-CASE-FRC-10022] c 12 N71-26546  
Electrohydrodynamic control valve Patent  
[NASA-CASE-NPO-10416] c 12 N71-27332  
Fluid jet amplifier Patent  
[NASA-CASE-XLE-09341] c 12 N71-28741  
Nuclear mass flowmeter  
[NASA-CASE-MFS-20485] c 14 N72-11365  
Flow rate switch  
[NASA-CASE-NPO-10722] c 09 N72-20199  
Torsional disconnect unit  
[NASA-CASE-NPO-10704] c 15 N72-20445

Capacitive tank gaging apparatus being independent of liquid distribution

- [NASA-CASE-MFS-21629] c 14 N72-22442  
Cryogenic feedthrough  
[NASA-CASE-LAR-10031] c 15 N72-22484  
Geysering inhibitor for vertical cryogenic transfer pipe  
[NASA-CASE-KSC-10615] c 15 N73-12486  
Pump for delivering heated fluids  
[NASA-CASE-NPO-11417] c 15 N73-24513  
Flow control valve — for high temperature fluids  
[NASA-CASE-NPO-11951-1] c 37 N74-21065  
Apparatus for establishing flow of a fluid mass having a known velocity  
[NASA-CASE-MFS-21424-1] c 34 N74-27730  
Internally supported flexible duct joint — device for conducting fluids in high pressure systems  
[NASA-CASE-MFS-19193-1] c 37 N75-19686  
Flow measuring apparatus  
[NASA-CASE-LEW-12078-1] c 35 N75-30503  
Filter regeneration systems — a system for regenerating a system filter in a fluid flow line  
[NASA-CASE-MSC-14273-1] c 34 N75-33342  
Combined dual scatter, local oscillator laser Doppler velocimeter  
[NASA-CASE-ARC-10642-1] c 36 N76-14447  
Externally supported internally stabilized flexible duct joint  
[NASA-CASE-MFS-19194-1] c 37 N76-14460  
Vortex generator for controlling the dispersion of effluents in a flowing liquid  
[NASA-CASE-LAR-12045-1] c 34 N77-24423  
Pseudo-backscatter laser Doppler velocimeter employing antiparallel-reflector in the forward direction  
[NASA-CASE-ARC-10970-1] c 36 N77-25501  
Accumulator  
[NASA-CASE-MFS-19287-1] c 34 N77-30399  
Apparatus for measuring a sorbate dispersed in a fluid stream  
[NASA-CASE-ARC-10896-1] c 35 N78-19465  
Flow compensating pressure regulator  
[NASA-CASE-LEW-12718-1] c 34 N78-25351  
Fluid valve assembly  
[NASA-CASE-MSC-12731-1] c 37 N78-25426  
Positive isolation disconnect  
[NASA-CASE-MSC-16043-1] c 37 N79-11402  
Fluid velocity measuring device  
[NASA-CASE-LAR-11729-1] c 34 N79-12359  
Hot foil transducer skin friction sensor  
[NASA-CASE-LAR-12321-1] c 35 N82-24470  
Dual laser optical system and method for studying fluid flow  
[NASA-CASE-MFS-25315-1] c 36 N83-29680  
Flow modifying device  
[NASA-CASE-LEW-13562-2] c 07 N85-35195  
Fluid leak indicator  
[NASA-CASE-MSC-20783-1] c 35 N86-20756  
Fluid flow meter for measuring the rate of fluid flow in a conduit  
[NASA-CASE-MFS-28030-1] c 35 N86-25752  
Two-axis, self-nulling skin friction balance  
[NASA-CASE-LAR-13294-1] c 35 N86-32696  
Multi-path peristaltic pump  
[NASA-CASE-MSC-20907-1] c 37 N87-18818  
Dual motion valve with single motion input  
[NASA-CASE-MFS-28058-1] c 37 N87-21332  
Liquid sheet radiator apparatus  
[NASA-CASE-LEW-14295-1] c 31 N89-14348  
Pressure measuring probe  
[NASA-CASE-LAR-13853-1] c 35 N89-14423  
Fluidic momentum controller  
[NASA-CASE-MSC-20906-2] c 35 N89-15379  
Dual wavelength holographic interferometry system  
[NASA-CASE-MFS-28242-1] c 35 N89-26202  
Apparatus for mixing solutions in low gravity environments  
[NASA-CASE-MFS-26047-1] c 29 N90-21209  
Heat exchanger with oscillating flow  
[NASA-CASE-LAR-14033-1] c 34 N90-27072

FLUID INJECTION

- Apparatus for igniting solid propellants Patent  
[NASA-CASE-XLE-00207] c 28 N70-33375  
Method of igniting solid propellants Patent  
[NASA-CASE-XLE-01988] c 27 N71-15634  
Aerodynamic spike nozzle Patent  
[NASA-CASE-XGS-01143] c 31 N71-15647  
Process of forming particles in a cryogenic path Patent  
[NASA-CASE-NPO-10250] c 23 N71-16212  
Apparatus for purging systems handling toxic, corrosive, noxious and other fluids Patent  
[NASA-CASE-XMS-01905] c 12 N71-21089  
Tertiary flow injection thrust vectoring system Patent  
[NASA-CASE-MFS-20831] c 28 N71-29153  
Programmable physiological infusion  
[NASA-CASE-ARC-10447-1] c 52 N74-22771

FLUID JETS

- Propeller blade loading control Patent  
[NASA-CASE-XAC-00139] c 02 N70-34856

FLUID LOGIC

- Logic AND gate for fluid circuits Patent  
[NASA-CASE-XLA-07391] c 12 N71-17579

FLUID MANAGEMENT

- Capillary heat transport and fluid management device  
[NASA-CASE-MFS-28217-1] c 34 N89-14392

FLUID MECHANICS

- Leak detector Patent  
[NASA-CASE-LAR-10323-1] c 12 N71-17573  
Parallel-plate viscometer with double diaphragm suspension  
[NASA-CASE-NPO-11387] c 14 N73-14429  
Modified face seal for positive film stiffness  
[NASA-CASE-LEW-12989-1] c 37 N82-12442

FLUID POWER

- Fluid power transmission Patent  
[NASA-CASE-XMS-01445] c 12 N71-16031  
Fluid power transmitting gas bearing Patent  
[NASA-CASE-ERC-10097] c 15 N71-28465

FLUID PRESSURE

- Flow compensating pressure regulator  
[NASA-CASE-LEW-12718-1] c 34 N78-25351  
Self-stabilizing radial face seal  
[NASA-CASE-LEW-12991-1] c 37 N81-24442  
Pressure letdown method and device for coal conversion systems  
[NASA-CASE-NPO-15100-1] c 44 N84-14583  
Damping seal for turbomachinery  
[NASA-CASE-MFS-25842-2] c 37 N86-20788

FLUID ROTOR GYROSCOPES

- Piezoelectric pump Patent  
[NASA-CASE-XNP-05429] c 26 N71-21824

FLUID SWITCHING ELEMENTS

- Booster tank system Patent  
[NASA-CASE-MSC-12390] c 27 N71-29155

FLUID TRANSMISSION LINES

- Low heat leak connector for cryogenic system  
[NASA-CASE-XLE-02367-1] c 31 N79-21225

FLUIDIC CIRCUITS

- Technique of duplicating fragile core  
[NASA-CASE-XLA-07829] c 15 N72-16329  
Flow measuring apparatus  
[NASA-CASE-LEW-12078-1] c 35 N75-30503

FLUIDICS

- Fluidic-thermochromic display device Patent  
[NASA-CASE-ERC-10031] c 12 N71-18603  
Plasma fluidic hybrid display Patent  
[NASA-CASE-ERC-10100] c 09 N71-33519  
Fluidic proportional thruster system  
[NASA-CASE-ARC-10106-1] c 28 N72-22769  
Fluid pressure amplifier and system  
[NASA-CASE-LAR-10868-1] c 33 N74-11050  
Fluid valve assembly  
[NASA-CASE-MSC-12731-1] c 37 N78-25426  
Fluidic angular velocity sensor  
[NASA-CASE-NPO-16479-1CU] c 35 N86-32695  
Heat exchanger with oscillating flow  
[NASA-CASE-LAR-14033-1] c 34 N90-27072

FLUIDIZED BED PROCESSORS

- Continuous coal processing method  
[NASA-CASE-NPO-13758-2] c 31 N81-15154  
Fluidized bed coal combustion reactor  
[NASA-CASE-NPO-14273-1] c 25 N82-11144  
Solar heated fluidized bed gasification system  
[NASA-CASE-NPO-15071-1] c 44 N82-16475  
Use of glow discharge in fluidized beds  
[NASA-CASE-ARC-11245-1] c 28 N82-18401  
Fluidized bed desulfurization  
[NASA-CASE-NPO-15924-1] c 25 N85-35253

FLUIDS

- Automated fluid chemical analyzer Patent  
[NASA-CASE-XNP-09451] c 06 N71-26754  
Bacteria detection instrument and method  
[NASA-CASE-GSC-11533-1] c 14 N73-13435  
Low outgassing polydimethylsiloxane material and preparation thereof  
[NASA-CASE-GSC-11358-1] c 06 N73-26100  
Fluid mass sensor for a zero gravity environment  
[NASA-CASE-MSC-14653-1] c 35 N77-19385  
Self-charging metering and dispensing device for fluids  
[NASA-CASE-MSC-20275-1] c 35 N85-21595  
Fluid-loop reaction system  
[NASA-CASE-NPO-17204-1CU] c 34 N90-26292  
Adjustable choke for fluids nozzle  
[NASA-CASE-NPO-17625-1CU] c 34 N90-27070

FLUORESCENCE

- Apparatus for producing three-dimensional recordings of fluorescence spectra Patent  
[NASA-CASE-XGS-01231] c 14 N70-41876  
Internal work light Patent  
[NASA-CASE-XKS-05932] c 09 N71-26787

- Chromato-fluorographic drug detector — device for detecting and recording fluorescent properties of materials  
[NASA-CASE-ARC-10833-1] c 25 N74-26947
- Fluorescence detector for monitoring atmospheric pollutants  
[NASA-CASE-NPO-13231-1] c 45 N75-27585
- Fluorescent radiation converter  
[NASA-CASE-GSC-12528-1] c 74 N81-24900
- Optical multiple sample vacuum integrating sphere  
[NASA-CASE-GSC-12849-1] c 74 N88-26190

**FLUORIDES**

- Self-lubricating fluoride metal composite materials Patent  
[NASA-CASE-XLE-08511] c 18 N71-23710
- Corrosion resistant beryllium Patent  
[NASA-CASE-LEW-10327] c 17 N71-33408
- Perfluoro polyether acyl fluorides  
[NASA-CASE-NPO-10765] c 06 N72-20121
- Carbide-fluoride-silver self-lubricating composite  
[NASA-CASE-LEW-14196-2] c 37 N87-25585
- Tm,Ho:YLF laser end-pumped by a semiconductor diode laser array  
[NASA-CASE-NPO-17282-1-CU] c 36 N89-12856
- Graphite fluoride fiber polymer composite material  
[NASA-CASE-LEW-14472-1] c 24 N89-14259

**FLUORINATION**

- Highly fluorinated polyurethanes  
[NASA-CASE-NPO-10767-2] c 06 N72-27151
- Fluorinated esters of polycarboxylic acids  
[NASA-CASE-MFS-21040-1] c 06 N73-30098

**FLUORINE**

- Reaction of fluorine with polyperfluoropolylenes  
[NASA-CASE-NPO-10862] c 06 N72-22107
- Process for the preparation of fluorine containing crosslinked elastomeric polytriazine and product so produced  
[NASA-CASE-ARC-11248-1] c 27 N81-17259

**FLUORINE COMPOUNDS**

- Fluorine-containing polyformals  
[NASA-CASE-XMF-06900-1] c 27 N79-21181
- Precision heat forming of tetrafluoroethylene tubing  
[NASA-CASE-MSC-18430-1] c 37 N82-24491

**FLUORO COMPOUNDS**

- New polymers of perfluorobutadiene and method of manufacture Patent application  
[NASA-CASE-NPO-10863] c 06 N70-11251
- Method of polymerizing perfluorobutadiene Patent application  
[NASA-CASE-NPO-10447] c 06 N70-11252

**FLUOROHYDROXY**

- Fluorohydroxy ethers  
[NASA-CASE-MFS-10507] c 06 N73-30101
- Highly fluorinated polymers  
[NASA-CASE-MFS-11492] c 06 N73-30102

- Highly fluorinated polyurethanes  
[NASA-CASE-NPO-10767-1] c 06 N73-33076
- Utilization of oxygen difluoride for syntheses of fluoropolymers  
[NASA-CASE-NPO-12061-1] c 27 N76-16228

- The 1,1,1-triaryl-2,2,2-trifluoroethanes and process for their synthesis  
[NASA-CASE-ARC-11097-1] c 25 N82-24312
- Substituted 1,1,1-triaryl-2,2,2-trifluoroethanes and processes for their synthesis  
[NASA-CASE-LEW-14345-2] c 25 N90-23497

**FLUOROCARBONS**

- Electrically conductive fluorocarbon polymer  
[NASA-CASE-XLE-06774-2] c 06 N72-25150
- Substituted 1,1,1-Triaryl-2,2,2-Trifluoroethanes and processes for their synthesis  
[NASA-CASE-LEW-14345-1] c 23 N88-26404

**FLUOROHYDROCARBONS**

- New Condensation polyimides containing 1,1,1-triaryl-2,2,2-trifluoroethane structures  
[NASA-CASE-LEW-14346-1] c 23 N90-19300

**FLUOROPOLYMERS**

- Perfluoroalkyl polytriazines containing pendent iododifluoromethyl groups  
[NASA-CASE-ARC-11241-1] c 25 N81-14016
- Texturing polymer surfaces by transfer casting — cardiovascular prosthesis  
[NASA-CASE-LEW-13120-1] c 27 N82-28440

- Surface texturing of fluoropolymers  
[NASA-CASE-LEW-13028-1] c 27 N82-33521
- Cellular thermosetting fluoropolymers and process for making them  
[NASA-CASE-GSC-13008-1] c 27 N88-23894

- Substituted 1,1,1-Triaryl-2,2,2-Trifluoroethanes and processes for their synthesis  
[NASA-CASE-LEW-14345-1] c 23 N88-26404
- Cellular thermosetting fluorodiepoxy polymers  
[NASA-CASE-GSC-13008-2] c 27 N90-16949

- New Condensation polyimides containing 1,1,1-triaryl-2,2,2-trifluoroethane structures  
[NASA-CASE-LEW-14346-1] c 23 N90-19300

**FLUTTER**

- Antiflutter ball check valve Patent  
[NASA-CASE-XNP-01152] c 15 N70-41811
- Suppression of flutter  
[NASA-CASE-LAR-10682-1] c 02 N73-26004
- Decoupler pylon: wing/store flutter suppressor  
[NASA-CASE-LAR-12468-1] c 08 N82-32373
- Remote pivot decoupler pylon: Wing/store flutter suppressor  
[NASA-CASE-LAR-13173-1] c 05 N87-14314
- Airfoil flutter model suspension system  
[NASA-CASE-LAR-13522-1-SB] c 09 N87-25334

**FLUTTER ANALYSIS**

- Model mount system for testing flutter  
[NASA-CASE-LAR-12950-1] c 09 N84-34448

**FLUX (RATE)**

- Two axis fluxgate magnetometer Patent  
[NASA-CASE-GSC-10441-1] c 14 N71-27325
- Apparatus for measuring charged particle beam  
[NASA-CASE-MFS-25641-1] c 72 N84-28575

**FLUX DENSITY**

- Particle beam measurement apparatus using beam kinetic energy to change the heat sensitive resistance of the detection probe Patent  
[NASA-CASE-XLE-00243] c 14 N70-38602
- Apparatus for measuring charged particle beam  
[NASA-CASE-MFS-25641-1] c 72 N84-28575
- Copper chloride cathode for a secondary battery  
[NASA-CASE-NPO-17640-1-CU] c 33 N90-17011

**FLUXES**

- Solder flux which leaves corrosion-resistant coating Patent  
[NASA-CASE-XNP-03459-2] c 18 N71-15688
- Soldering with solder flux which leaves corrosion resistant coating Patent  
[NASA-CASE-XNP-03459] c 15 N71-21078

**FLYWHEELS**

- Energy storage apparatus  
[NASA-CASE-GSC-12030-1] c 44 N78-24608
- Rotatable mass for a flywheel  
[NASA-CASE-MFS-23051-1] c 37 N79-10422
- Safety flywheel — using flexible materials energy storage  
[NASA-CASE-HQN-10888-1] c 44 N79-14527
- Method of manufacture of bonded fiber flywheel — fiberglass-epoxy  
[NASA-CASE-MFS-23674-1] c 24 N81-29163
- Bidirectional control system for energy flow in solar powered flywheel  
[NASA-CASE-MFS-25978-1] c 44 N87-21410
- Three axis attitude control system  
[NASA-CASE-GSC-12970-1] c 08 N88-23808

**FOAMS**

- Foam generator Patent  
[NASA-CASE-XLA-00838] c 03 N70-36778
- Method for continuous variation of propellant flow and thrust in propulsive devices Patent  
[NASA-CASE-XLE-00177] c 28 N70-40367
- Filament wound container Patent  
[NASA-CASE-XLE-03803] c 15 N71-23816
- Novel polycarboxylic prepolymeric materials and polymers thereof Patent  
[NASA-CASE-NPO-10596] c 06 N71-25929
- Thermally activated foaming compositions Patent  
[NASA-CASE-LAR-10373-1] c 18 N71-26155
- Method of making a solid propellant rocket motor Patent  
[NASA-CASE-XLA-04126] c 28 N71-26779

- Thickness measuring and injection device Patent  
[NASA-CASE-MFS-20261] c 14 N71-27005
- Method of making foamed materials in zero gravity  
[NASA-CASE-XMF-09902] c 15 N72-11387

- Polyimide foam for the thermal insulation and fire protection  
[NASA-CASE-ARC-10464-1] c 27 N74-12812
- Intumescent composition, foamed product prepared therewith and process for making same  
[NASA-CASE-ARC-10304-2] c 27 N74-27037

- Polymeric foams from cross-linkable poly-n-arylenebenzimidazoles  
[NASA-CASE-ARC-11008-1] c 27 N78-31232
- Ambient cure polyimide foams — thermal resistant foams  
[NASA-CASE-ARC-11170-1] c 27 N79-11215

- Catalysts for polyimide foams from aromatic isocyanates and aromatic dianhydrides — flame retardant foams  
[NASA-CASE-ARC-11107-1] c 25 N80-16116
- Impacting device for testing insulation  
[NASA-CASE-MFS-25862-2] c 37 N84-33807

- Insulation bonding test system  
[NASA-CASE-MFS-25862-1] c 27 N85-20126
- Cryogenic insulation strength and bond tester  
[NASA-CASE-MFS-25910-1] c 39 N86-20841

- Cellular thermosetting fluoropolymers and process for making them  
[NASA-CASE-GSC-13008-1] c 27 N88-23894

- Cellular thermosetting fluoropolymers and process for making them  
[NASA-CASE-GSC-13008-2] c 27 N88-23894

- Cellular thermosetting fluoropolymers and process for making them  
[NASA-CASE-GSC-13008-1] c 27 N88-23894

- Cellular thermosetting fluoropolymers and process for making them  
[NASA-CASE-GSC-13008-2] c 27 N88-23894

- Cellular thermosetting fluoropolymers and process for making them  
[NASA-CASE-GSC-13008-1] c 27 N88-23894

- Cellular thermosetting fluoropolymers and process for making them  
[NASA-CASE-GSC-13008-2] c 27 N88-23894

- Cellular thermosetting fluorodiepoxy polymers  
[NASA-CASE-GSC-13008-2] c 27 N90-16949

**FOCAL PLANE DEVICES**

- Antenna array at focal plane of reflector with coupling network for beam switching Patent  
[NASA-CASE-GSC-10220-1] c 07 N71-27233
- High speed multi focal plane optical system  
[NASA-CASE-GSC-12683-1] c 74 N83-36898
- Focal plane array optical proximity sensor  
[NASA-CASE-NPO-15155-1] c 74 N85-22139
- Projection lens scanning laser velocimeter system  
[NASA-CASE-ARC-11547-1] c 36 N87-17026
- Laterally stacked Schottky diodes for infrared sensor applications  
[NASA-CASE-NPO-17426-1-CU] c 33 N90-10329

**FOCI**

- High speed multi focal plane optical system  
[NASA-CASE-GSC-12683-1] c 74 N83-36898

**FOCUSING**

- X-ray reflection collimator adapted to focus X-radiation directly on a detector Patent  
[NASA-CASE-XHQ-04106] c 14 N70-40240
- Focussing system for an ion source having apertured electrodes Patent  
[NASA-CASE-XNP-03332] c 09 N71-10618
- Petzval type objective including field shaping lens Patent  
[NASA-CASE-GSC-10700] c 23 N71-30027
- Absolute focus lock for microscopes  
[NASA-CASE-LAR-10184] c 14 N72-22445
- Electron beam controller — using magnetic field to refocus spent electron beam in microwave oscillator tube  
[NASA-CASE-LEW-11617-1] c 33 N74-10195
- Automatic focus control for facsimile cameras  
[NASA-CASE-LAR-11213-1] c 35 N75-15014
- Multiplate focusing collimator — for scanning small near radiation sources  
[NASA-CASE-MFS-20932-1] c 35 N75-19616
- RF beam center location method and apparatus for power transmission system  
[NASA-CASE-NPO-13821-1] c 44 N78-28594
- Scanning afocal laser velocimeter projection lens system  
[NASA-CASE-LAR-12328-1] c 36 N82-32712
- Gyrotron transmitting tube  
[NASA-CASE-LEW-13429-1] c 33 N83-31952
- Dual mode laser velocimeter  
[NASA-CASE-ARC-11634-1] c 36 N88-14350

**FOG**

- Anti-fog composition — for prevention of fogging on surfaces such as space helmet visors and windshields  
[NASA-CASE-MSC-13530-2] c 23 N75-14834
- Environmental fog/rain visual display system for aircraft simulators  
[NASA-CASE-ARC-11158-1] c 09 N82-24212
- Warm fog dissipation using large volume water sprays  
[NASA-CASE-MFS-25962-1] c 09 N89-25242

**FOILS (MATERIALS)**

- Foil seal  
[NASA-CASE-XLE-05130] c 15 N69-21362
- Method of making an insulation foil  
[NASA-CASE-LEW-11484-1] c 24 N75-33181
- Partial interlaminar separation system for composites  
[NASA-CASE-LAR-12065-1] c 24 N81-14000
- Method of making a partial interlaminar separation composite system  
[NASA-CASE-LAR-12065-2] c 24 N81-33235
- Oxygen diffusion barrier coating  
[NASA-CASE-LAR-13474-1-SB] c 26 N87-25455

**FOLDING**

- Folding apparatus Patent  
[NASA-CASE-XLA-00137] c 15 N70-33180

**FOLDING STRUCTURES**

- Space and atmospheric reentry vehicle Patent  
[NASA-CASE-XGS-00260] c 31 N70-37924
- Collapseable loop antenna for space vehicle Patent  
[NASA-CASE-XMF-00437] c 07 N70-40202
- Folding boom assembly Patent  
[NASA-CASE-XGS-00938] c 32 N70-41367
- Foldable conduit Patent  
[NASA-CASE-XLE-00620] c 32 N70-41579
- Foldable solar concentrator Patent  
[NASA-CASE-XLA-04622] c 03 N70-41580
- Wing deployment method and apparatus Patent  
[NASA-CASE-XMS-00907] c 02 N70-41630
- Variable sweep aircraft Patent  
[NASA-CASE-XLA-03659] c 02 N71-11041
- Radiator deployment actuator Patent  
[NASA-CASE-MSC-11817-1] c 15 N71-26611
- Foldable construction block  
[NASA-CASE-MSC-12233-1] c 15 N72-25454
- Folding structure fabricated of rigid panels  
[NASA-CASE-XHQ-02146] c 18 N75-27040
- Collapseable corrugated horn antenna  
[NASA-CASE-LAR-11745-1] c 32 N80-29539

Foldable beam  
[NASA-CASE-LAR-12077-1] c 31 N81-25259  
Telescoping columns — parabolic antenna support  
[NASA-CASE-LAR-12195-1] c 31 N81-27324  
Sequentially deployable maneuverable tetrahedral beam  
[NASA-CASE-LAR-13098-1] c 31 N86-19479  
Self-locking telescoping manipulator arm  
[NASA-CASE-MFS-25906-1] c 37 N86-20789  
Shuttle-launch triangular space station  
[NASA-CASE-MSC-20676-1] c 18 N86-24729  
Synchronously deployable truss structure  
[NASA-CASE-LAR-13117-1] c 37 N86-25789  
Protective telescoping shield for solar concentrator  
[NASA-CASE-NPO-16236-1] c 44 N86-27706  
Deployable M-braced truss structure  
[NASA-CASE-LAR-13081-1] c 37 N86-32737  
Foldable self-erecting joint  
[NASA-CASE-MSC-20635-1] c 18 N87-14373  
Sun shield  
[NASA-CASE-MSC-20162-1] c 37 N87-17036  
Deployable geodesic truss structure  
[NASA-CASE-LAR-13113-1] c 31 N87-25492

**FOOD**  
Bacteria detection instrument and method  
[NASA-CASE-GSC-11533-1] c 14 N73-13435

**FOOTPRINTS**  
Multibeam single frequency synthetic aperture radar processor for imaging separate range swaths  
[NASA-CASE-NPO-14525-2] c 32 N83-31918

**FORCE**  
Ferrofluidic solenoid  
[NASA-CASE-NPO-11738-1] c 09 N73-30185

**FORCE DISTRIBUTION**  
Device for handling heavy loads  
[NASA-CASE-XNP-04969] c 11 N69-27466  
Two force component measuring device Patent  
[NASA-CASE-XAC-04886-1] c 14 N71-20439  
Tensile strength testing device Patent  
[NASA-CASE-XNP-05634] c 15 N71-24834  
Impact monitoring apparatus  
[NASA-CASE-MSC-15626-1] c 14 N72-25411  
Variable direction force coupler  
[NASA-CASE-MFS-20317] c 15 N73-13463  
Subminiature insertable force transducer — including a strain gage to measure forces in muscles  
[NASA-CASE-NPO-13423-1] c 33 N75-31329  
Device for quick changeover between wind tunnel force and pressure testing  
[NASA-CASE-LAR-13512-1] c 35 N87-28884  
Linear force device  
[NASA-CASE-MSC-20549-2] c 35 N88-24927

**FORCED VIBRATION**  
Seismic vibration source  
[NASA-CASE-NPO-14112-1] c 46 N79-22679

**FOREBODIES**  
Aerodynamic side-force alleviator means  
[NASA-CASE-LAR-12326-1] c 02 N81-14968  
Actuated forebody strakes  
[NASA-CASE-LAR-13983-1] c 05 N90-23390

**FORMALDEHYDE**  
Synthesis of polyformals  
[NASA-CASE-ARC-11244-1] c 23 N82-16174  
Synthesis of 2,4,8,10-tetroxaspiro[5.5]undecane  
[NASA-CASE-ARC-11243-2] c 23 N85-33187

**FORMAT**  
Digital data reformatter/deserializer  
[NASA-CASE-NPO-13676-1] c 60 N79-20751

**FORMATES**  
Fluorine containing polyurethane  
[NASA-CASE-MFS-10509] c 06 N73-30103

**FORMING TECHNIQUES**  
Wire grid forming apparatus Patent  
[NASA-CASE-XLE-00023] c 15 N70-33330  
Method for forming plastic materials Patent  
[NASA-CASE-XMS-05516] c 15 N71-17803  
Method of making tubes Patent  
[NASA-CASE-XGS-04175] c 15 N71-18579  
Magnetomotive metal working device Patent  
[NASA-CASE-XMF-03793] c 15 N71-24833  
Apparatus for making curved reflectors Patent  
[NASA-CASE-XLE-08917-2] c 15 N71-24836  
Method of forming shapes from planar sheets of thermosetting materials  
[NASA-CASE-NPO-11036] c 15 N72-24522  
Method of heat treating a formed powder product material  
[NASA-CASE-LEW-10805-3] c 26 N74-10521  
Molding apparatus — for thermosetting plastic compositions  
[NASA-CASE-LAR-10489-2] c 31 N74-32920  
Process for making sheets with parallel pores of uniform size  
[NASA-CASE-GSC-10984-1] c 37 N75-26371

Drilled ball bearing with a one piece anti-tipping cage assembly  
[NASA-CASE-LEW-11925-1] c 37 N75-31446  
Apparatus for forming dished ion thruster grids  
[NASA-CASE-LEW-11694-2] c 37 N76-14461  
Acoustic energy shaping  
[NASA-CASE-NPO-13802-1] c 71 N78-10837  
Method of forming metal hydride films  
[NASA-CASE-LEW-12083-1] c 37 N78-13436  
Method of producing complex aluminum alloy parts of high temper, and products thereof  
[NASA-CASE-MSC-19693-1] c 26 N78-24333  
Solar cell with improved N-region contact and method of forming the same  
[NASA-CASE-NPO-14205-1] c 44 N79-31752  
Method and apparatus for producing concentric hollow spheres — inertial confinement fusion targets  
[NASA-CASE-NPO-14596-1] c 31 N81-33319  
Precision heat forming of tetrafluoroethylene tubing  
[NASA-CASE-MSC-18430-1] c 37 N82-24491  
Sphere forming method and apparatus  
[NASA-CASE-NPO-15070-1] c 31 N83-35176

**FOSSIL FUELS**  
Supercritical solvent coal extraction  
[NASA-CASE-NPO-15210-1] c 25 N84-22709

**FOUNDATIONS**  
Expandable support means  
[NASA-CASE-NPO-11059] c 15 N72-17454  
Adjustable securing base  
[NASA-CASE-MSC-19666-1] c 37 N78-17383  
Space station erectable manipulator placement system  
[NASA-CASE-MSC-21096-1] c 18 N89-12621

**FOURIER TRANSFORMATION**  
Continuous Fourier transform method and apparatus — for the analysis of simultaneous analog signal components  
[NASA-CASE-ARC-10466-1] c 60 N75-13539  
Remotely controllable real-time optical processor  
[NASA-CASE-NPO-16750-1-CU] c 74 N89-14078

**FRACTIONATION**  
Method and apparatus for distillation of liquids Patent  
[NASA-CASE-XNP-08124] c 15 N71-27184  
Electrophoretic fractional elution apparatus employing a rotational seal fraction collector  
[NASA-CASE-MFS-23284-1] c 37 N80-14397  
Electrophoresis device  
[NASA-CASE-MFS-25426-1] c 25 N83-10126  
Spillage detector for liquid chromatography systems  
[NASA-CASE-MSC-20206-1] c 25 N86-27431

**FRACTURE MECHANICS**  
Apparatus for positioning and loading a test specimen Patent  
[NASA-CASE-XLE-01300] c 15 N70-41993

**FRACTURE STRENGTH**  
Process for making a high toughness-high strength ion alloy  
[NASA-CASE-LEW-12542-2] c 26 N79-22271  
High toughness-high strength iron alloy  
[NASA-CASE-LEW-12542-3] c 26 N80-32484  
Method of making a partial interlaminar separation composite system  
[NASA-CASE-LAR-12065-2] c 24 N81-33235  
Process of end-capping a polyimide system  
[NASA-CASE-LAR-13135-1] c 27 N86-19456  
Polyimides containing carbonyl and ether connecting groups  
[NASA-CASE-LAR-13633-1] c 27 N87-24575  
Directional solidification of superalloys  
[NASA-CASE-MFS-28314-1] c 26 N90-15227  
Fully articulated four-point-bend loading fixture  
[NASA-CASE-LEW-14776-1] c 37 N90-15445

**FRAMES**  
Articulated multiple couch assembly Patent  
[NASA-CASE-MSC-11253] c 05 N71-12343  
Soft frame adjustable eyeglasses Patent  
[NASA-CASE-XMS-06064] c 05 N71-23096  
Expandable space frames  
[NASA-CASE-ERC-10365-1] c 31 N73-32749  
Laser measuring system for incremental assemblies — measuring wire-wrapped frame assemblies in spark chambers  
[NASA-CASE-GSC-12321-1] c 36 N82-16396  
Inorganic spark chamber frame and method of making the same  
[NASA-CASE-GSC-12354-1] c 35 N82-24471

**FRAMING CAMERAS**  
High speed photo-optical time recording  
[NASA-CASE-KSC-10294] c 14 N72-18411

**FREE FLIGHT TEST APPARATUS**  
Support apparatus for dynamic testing Patent  
[NASA-CASE-XMF-01772] c 11 N70-41677  
Hydraulic support for dynamic testing Patent  
[NASA-CASE-XMF-03248] c 11 N71-10604  
Test unit free-flight suspension system Patent  
[NASA-CASE-XLA-00939] c 11 N71-15926

**FREE WING AIRCRAFT**  
Free wing assembly for an aircraft  
[NASA-CASE-FRC-10092-1] c 05 N79-12061

**FREEZE DRYING**  
Modification of the physical properties of freeze-dried rice  
[NASA-CASE-MSC-13540-1] c 05 N72-33096

**FREZZING**  
System for and method of freezing biological tissue  
[NASA-CASE-GSC-12173-1] c 51 N79-10694  
Method of forming frozen spheres in a force-free drop tower  
[NASA-CASE-NPO-14845-1] c 27 N82-28442

**FREON**  
Solar energy power system — using Freon  
[NASA-CASE-MFS-21628-1] c 44 N75-32581

**FREQUENCIES**  
Controlled oscillator system with a time dependent output frequency  
[NASA-CASE-NPO-11962-1] c 33 N74-10194  
High efficiency multifrequency feed  
[NASA-CASE-GSC-11909] c 32 N74-20863  
Modified fast frequency acquisition via adaptive least squares algorithm  
[NASA-CASE-NPO-17845-1-CU] c 61 N90-27341

**FREQUENCY ANALYZERS**  
Digital frequency discriminator Patent  
[NASA-CASE-MFS-14322] c 08 N71-18692  
Broadband frequency discriminator Patent  
[NASA-CASE-NPO-10096] c 07 N71-24583  
Audio frequency marker system  
[NASA-CASE-NPO-11147] c 14 N72-27408  
Continuous Fourier transform method and apparatus — for the analysis of simultaneous analog signal components  
[NASA-CASE-ARC-10466-1] c 60 N75-13539  
Frequency discriminator and phase detector circuit  
[NASA-CASE-NPO-11515-1] c 33 N77-13315

**FREQUENCY CONTROL**  
Bus voltage compensation circuit for controlling direct current motor  
[NASA-CASE-XMS-04215-1] c 09 N69-39987  
Variable frequency magnetic multivibrator Patent  
[NASA-CASE-XGS-00458] c 09 N70-38604  
Variable frequency magnetic multivibrator Patent  
[NASA-CASE-XGS-00131] c 09 N70-38995  
Automatic frequency discriminators and control for a phase-lock loop providing frequency preset capabilities Patent  
[NASA-CASE-XMF-08665] c 10 N71-19467  
Linear accelerator frequency control system Patent  
[NASA-CASE-XGS-05441] c 10 N71-22962  
Tuning arrangement for an electron discharge device or the like Patent  
[NASA-CASE-XNP-09771] c 09 N71-24841  
Low loss dichroic plate  
[NASA-CASE-NPO-13171-1] c 32 N74-11000  
Automatic frequency control for FM transmitter  
[NASA-CASE-MFS-21540-1] c 32 N74-19790  
Acoustically controlled distributed feedback laser  
[NASA-CASE-NPO-13175-1] c 36 N75-31427  
Reflex feed system for dual frequency antenna with frequency cutoff means  
[NASA-CASE-NPO-14022-1] c 32 N78-31321  
Cam-operated pitch-change apparatus  
[NASA-CASE-LEW-13050-1] c 07 N79-14095  
Digital numerically controlled oscillator  
[NASA-CASE-MSC-16747-1] c 33 N81-17349  
High stability buffered phase comparator  
[NASA-CASE-GSC-12645-1] c 33 N84-16454  
Spectrophone stabilized laser with line center offset frequency control  
[NASA-CASE-NPO-15516-1] c 36 N84-22943  
Automatic oscillator frequency control system  
[NASA-CASE-GSC-12804-1] c 33 N86-20668

**FREQUENCY CONVERTERS**  
Frequency to analog converter Patent  
[NASA-CASE-XNP-07040] c 08 N71-12500  
Static inverters which sum a plurality of waves Patent  
[NASA-CASE-XMF-00663] c 08 N71-18752  
Voltage to frequency converter Patent  
[NASA-CASE-GSC-10022-1] c 10 N71-25882  
Family of frequency to amplitude converters  
[NASA-CASE-MSC-12395] c 09 N72-25257  
Variable frequency inverter for ac induction motors with torque, speed and braking control  
[NASA-CASE-MFS-22088-1] c 33 N75-15874

**FREQUENCY DISCRIMINATORS**  
PN lock indicator for dithered PN code tracking loop  
[NASA-CASE-NPO-14435-1] c 33 N81-33405  
Programmable electronic synthesized capacitance  
[NASA-CASE-GSC-12961-1] c 33 N87-22895  
Acoustic emission frequency discrimination  
[NASA-CASE-MSC-20467-1] c 35 N88-23966

## FREQUENCY DISTRIBUTION

- Antenna system using parasitic elements and two driven elements at 90 deg angle fed 180 deg out of phase Patent  
[NASA-CASE-XLA-00414] c 07 N70-38200
- Variable frequency oscillator with temperature compensation Patent  
[NASA-CASE-XNP-03916] c 09 N71-28810
- Ultra stable frequency distribution system  
[NASA-CASE-NPO-13836-1] c 32 N78-15323

## FREQUENCY DIVIDERS

- Low phase noise digital frequency divider  
[NASA-CASE-NPO-11569] c 10 N73-26229
- Technique for extending the frequency range of digital dividers  
[NASA-CASE-LAR-10730-1] c 33 N74-10223
- Symmetrical odd-modulus frequency divider  
[NASA-CASE-NPO-13426-1] c 33 N75-31330
- Electronic analog divider  
[NASA-CASE-LEW-11881-1] c 33 N77-17354

## FREQUENCY DIVISION MULTIPLEXING

- Satellite communication system and method Patent  
[NASA-CASE-GSC-10118-1] c 07 N71-24621
- Frequency division multiplex technique  
[NASA-CASE-KSC-10521] c 07 N73-20176

## FREQUENCY MEASUREMENT

- Measurement system  
[NASA-CASE-MFS-20658-1] c 14 N73-30386
- Frequency measurement by coincidence detection with standard frequency  
[NASA-CASE-MSC-14649-1] c 33 N76-16331
- Time domain phase measuring apparatus  
[NASA-CASE-GSC-12228-1] c 33 N79-10338
- Method and apparatus for measuring frequency and phase difference  
[NASA-CASE-MSC-20865-1] c 32 N87-18692
- Frequency domain laser velocimeter signal processor  
[NASA-CASE-LAR-13552-1-CU] c 33 N89-14385
- Apparatus for using a time interval counter to measure frequency stability  
[NASA-CASE-NPO-17325-1-CU] c 32 N90-17005

## FREQUENCY MODULATION

- Accelerometer with FM output Patent  
[NASA-CASE-XLA-00492] c 14 N70-34799
- Means for generating a sync signal in an FM communication system Patent  
[NASA-CASE-XNP-10830] c 07 N71-11281
- Bi-carrier demodulator with modulation Patent  
[NASA-CASE-XMF-01160] c 07 N71-11298
- Optical tracker having overlapping reticles on parallel axes Patent  
[NASA-CASE-XGS-05715] c 23 N71-16100
- Atomic hydrogen maser with bulb temperature control to remove wall shift in maser output frequency  
[NASA-CASE-HQN-10654-1] c 16 N73-13489
- Junction range finder  
[NASA-CASE-KSC-10108] c 14 N73-25461
- Automatic frequency control for FM transmitter  
[NASA-CASE-MFS-21540-1] c 32 N74-19790
- Symmetrical odd-modulus frequency divider  
[NASA-CASE-NPO-13426-1] c 33 N75-31330
- Frequency modulated oscillator  
[NASA-CASE-MFS-23181-1] c 33 N77-17351
- FM/CW radar system  
[NASA-CASE-MFS-22234-1] c 32 N79-10264
- Thickness measurement system  
[NASA-CASE-MFS-23721-1] c 31 N79-28370
- Method and apparatus for Doppler frequency modulation of radiation  
[NASA-CASE-NPO-14524-1] c 32 N80-24510
- Adaptive control system for line-commutated inverters  
[NASA-CASE-MFS-25209-1] c 33 N83-35227
- Fiber optic frequency transfer link  
[NASA-CASE-NPO-17703-1-CU] c 74 N89-29191

## FREQUENCY MULTIPLIERS

- Multiple varactor frequency doubler Patent  
[NASA-CASE-XMF-04958-1] c 10 N71-26414
- Open loop digital frequency multiplier  
[NASA-CASE-MSC-12709-1] c 33 N77-24375

## FREQUENCY RANGES

- Variable time constant smoothing circuit Patent  
[NASA-CASE-XGS-01983] c 10 N70-41964
- Variable frequency nuclear magnetic resonance spectrometer Patent  
[NASA-CASE-XNP-09830] c 14 N71-26266
- Technique for extending the frequency range of digital dividers  
[NASA-CASE-LAR-10730-1] c 33 N74-10223
- Multichannel logarithmic RF level detector  
[NASA-CASE-LAR-11021-1] c 32 N76-14321
- Multiple rate digital command detection system with range clean-up capability  
[NASA-CASE-NPO-13753-1] c 32 N77-20289
- Multibeam single frequency synthetic aperture radar processor for imaging separate range swaths  
[NASA-CASE-NPO-14525-1] c 32 N79-19195

- Improving the geometric fidelity of imaging systems employing sensor arrays  
[NASA-CASE-NPO-17970-1-CU] c 43 N90-26384

## FREQUENCY SCANNING

- Automatic communication signal monitoring system  
[NASA-CASE-NPO-13941-1] c 32 N79-10262
- Frequency-scanning particle size spectrometer  
[NASA-CASE-NPO-13806-2] c 35 N80-18364
- Apparatus and method for determining the position of a radiant energy source  
[NASA-CASE-GSC-12147-1] c 32 N81-27341

## FREQUENCY SHIFT

- Doppler frequency spread correction device for multiplex transmissions  
[NASA-CASE-XGS-02749] c 07 N69-39978
- Serrodyne frequency converter re-entrant amplifier system Patent  
[NASA-CASE-XGS-01022] c 07 N71-16088
- Elimination of frequency shift in a multiplex communication system Patent  
[NASA-CASE-XNP-01306] c 07 N71-20814
- Laser fluid velocity detector Patent  
[NASA-CASE-XAC-10770-1] c 16 N71-24828
- Laser Doppler velocity simulator — to induce frequency shift  
[NASA-CASE-LAR-12176-1] c 36 N80-16321

## FREQUENCY SHIFT KEYING

- Frequency shift keyed demodulator Patent  
[NASA-CASE-XGS-02889] c 07 N71-11282
- Frequency shift keying apparatus Patent  
[NASA-CASE-XGS-01537] c 07 N71-23405
- Single frequency multitransmitter telemetry  
[NASA-CASE-LAR-13006-1] c 17 N87-16863

## FREQUENCY STABILITY

- Method and apparatus for stabilizing a gaseous optical maser Patent  
[NASA-CASE-XGS-03644] c 16 N71-18614
- Broadband stable power multiplier Patent  
[NASA-CASE-XNP-10854] c 10 N71-26331
- Low phase noise oscillator using two parallel connected amplifiers  
[NASA-CASE-GSC-13018-1] c 33 N87-21232
- Apparatus for using a time interval counter to measure frequency stability  
[NASA-CASE-NPO-17325-1-CU] c 32 N90-17005

## FREQUENCY STANDARDS

- Method of resolving clock synchronization error and means therefor Patent  
[NASA-CASE-XNP-08875] c 10 N71-23099
- Atomic standard with variable storage volume  
[NASA-CASE-GSC-11895-1] c 35 N76-15436
- Ultra stable frequency distribution system  
[NASA-CASE-NPO-13836-1] c 32 N78-15323
- External bulb variable volume maser  
[NASA-CASE-GSC-12334-1] c 36 N79-14362
- Precise RF timing signal distribution to remote stations — fiber optics  
[NASA-CASE-NPO-14749-1] c 32 N81-14186

## FREQUENCY SYNCHRONIZATION

- Pseudonoise (PN) synchronization of data system with derivation of clock frequency from received signal for clocking receiver PN generator  
[NASA-CASE-XNP-03623] c 09 N73-28084
- Ultra stable frequency distribution system  
[NASA-CASE-NPO-13836-1] c 32 N78-15323
- System for synchronizing synthesizers of communication systems  
[NASA-CASE-GSC-12148-1] c 32 N79-20296

## FREQUENCY SYNTHESIZERS

- Digitally controlled frequency synthesizer Patent  
[NASA-CASE-XGS-02317] c 09 N71-23525
- System for synchronizing synthesizers of communication systems  
[NASA-CASE-GSC-12148-1] c 32 N79-20296
- Method for shaping and aiming narrow beams — sonar mapping and target identification  
[NASA-CASE-NPO-14632-1] c 32 N82-18443
- Reactanceless synthesized impedance bandpass amplifier  
[NASA-CASE-GSC-12788-1] c 33 N85-29145
- JFET reflection oscillator  
[NASA-CASE-GSC-12555-1] c 33 N86-19515

## FRICTION

- Refractory coatings  
[NASA-CASE-LEW-13169-2] c 26 N82-30371
- Missile rolling tail brake torque system — simulating bearing friction on canard controlled missiles  
[NASA-CASE-LAR-12751-1] c 15 N84-16231
- Thumb-actuated two-axis controller  
[NASA-CASE-ARC-11372-1] c 08 N86-27288

## FRICTION DRAG

- Active control of boundary layer transition and turbulence  
[NASA-CASE-LAR-13532-1] c 34 N86-26575
- Combined riblet and lebu drag reduction system  
[NASA-CASE-LAR-13286-1] c 02 N88-14071

## FRICTION FACTOR

- Self-lubricating gears and other mechanical parts Patent  
[NASA-CASE-MFS-14971] c 15 N71-24984
- Unidirectional flexural pivot  
[NASA-CASE-GSC-12622-1] c 37 N84-12492
- Bidirectional drive and brake mechanism  
[NASA-CASE-MSC-21540-1] c 37 N90-26342

## FRICTION MEASUREMENT

- Friction measuring apparatus Patent  
[NASA-CASE-XNP-08680] c 14 N71-22995
- Static coefficient test method and apparatus  
[NASA-CASE-GSC-11893-1] c 35 N76-31489
- Two-axis, self-nulling skin friction balance  
[NASA-CASE-LAR-13294-1] c 35 N86-32696

## FRICTION REDUCTION

- Low friction magnetic recording tape Patent  
[NASA-CASE-XGS-00373] c 23 N71-15978
- Production of hollow components for rolling element bearings by diffusion welding  
[NASA-CASE-LEW-11026-1] c 15 N73-33383
- Hydrodynamic skin-friction reduction  
[NASA-CASE-LAR-14078-1-CU] c 34 N90-27071

## FRICTIONLESS ENVIRONMENTS

- Air bearing Patent  
[NASA-CASE-XMF-01687] c 15 N71-10617
- Air cushion lift pad Patent  
[NASA-CASE-MFS-14685] c 31 N71-15689
- Method and apparatus of simulating zero gravity conditions Patent  
[NASA-CASE-MFS-12750] c 27 N71-16223

## FROST

- Insulating structure Patent  
[NASA-CASE-XMF-00341] c 15 N70-33323
- Device for determining frost depth and density  
[NASA-CASE-MFS-25754-1] c 35 N84-28018

## FROZEN FOODS

- Low temperature storage container for transporting perishables to space station  
[NASA-CASE-MFS-28248-1] c 31 N88-24817

## FUEL CAPSULES

- Acoustic suspension system  
[NASA-CASE-NPO-15435-1] c 71 N83-36846

## FUEL CELL POWER PLANTS

- Reactant pressure differential control for fuel cell gases  
[NASA-CASE-MSC-20127-2] c 37 N85-34403

## FUEL CELLS

- Method of making membranes  
[NASA-CASE-XNP-04264] c 03 N69-21337
- Combined electrolysis device and fuel cell and method of operation Patent  
[NASA-CASE-XLE-01645] c 03 N71-20904
- Sealing member and combination thereof and method of producing said sealing member Patent  
[NASA-CASE-XMS-01625] c 15 N71-23022
- Ion-exchange membrane with platinum electrode assembly Patent  
[NASA-CASE-XMS-02063] c 03 N71-29044
- Reconstituted asbestos matrix — for use in fuel or electrolysis cells  
[NASA-CASE-MSC-12568-1] c 24 N76-14204
- Dual membrane hollow fiber fuel cell and method of operating same  
[NASA-CASE-NPO-13732-1] c 44 N79-10513
- Method of making a light weight battery plaque  
[NASA-CASE-LEW-13349-1] c 26 N84-22734
- Reactant pressure differential control for fuel cell gases  
[NASA-CASE-MSC-20127-2] c 37 N85-34403

## FUEL COMBUSTION

- Fuel combustor  
[NASA-CASE-LEW-12137-1] c 25 N78-10224
- Heat pipes to reduce engine exhaust emissions  
[NASA-CASE-LEW-12590-1] c 37 N84-22958

## FUEL CONSUMPTION

- Method for improving the fuel efficiency of a gas turbine engine  
[NASA-CASE-LEW-13142-2] c 07 N86-20389
- Methods and apparatus for providing real-time control of a gaseous propellant rocket propulsion system  
[NASA-CASE-MSC-21542-1] c 20 N90-26073

## FUEL CONTROL

- Attitude and propellant flow control system and method Patent  
[NASA-CASE-XMF-00185] c 21 N70-34539
- Flexible ring slosh damping baffle Patent  
[NASA-CASE-LAR-10317-1] c 32 N71-16103
- Buoyant anti-slosh system Patent  
[NASA-CASE-XLA-04605] c 32 N71-16106
- Control valve and co-axial variable injector Patent  
[NASA-CASE-XNP-09702] c 15 N71-17654
- Force-balanced, throttle valve Patent  
[NASA-CASE-NPO-10808] c 15 N71-27432
- Gas turbine engine fuel control  
[NASA-CASE-LEW-11187-1] c 28 N73-19793

- Automotive gas turbine fuel control  
[NASA-CASE-LEW-12785-1] c 37 N78-24545  
Electrical servo actuator bracket — fuel control valves on jet engines  
[NASA-CASE-FRC-11044-1] c 37 N81-33483  
Heat pipes to reduce engine exhaust emissions  
[NASA-CASE-LEW-12590-1] c 37 N84-22958

**FUEL FLOW**

- System for preconditioning a combustible vapor  
[NASA-CASE-NPO-12072] c 28 N72-22772

**FUEL FLOW REGULATORS**

- Two-step rocket engine bipropellant valve Patent  
[NASA-CASE-XMS-04890-1] c 15 N70-22192  
Passively regulated water electrolysis rocket engine Patent  
[NASA-CASE-XGS-08729] c 28 N71-14044  
Oil cooling system for a gas turbine engine  
[NASA-CASE-LEW-12830-1] c 07 N77-23106

**FUEL GAGES**

- Response analyzers for sensors Patent  
[NASA-CASE-MFS-11204] c 14 N71-29134

**FUEL INJECTION**

- Injector-valve device Patent  
[NASA-CASE-XLE-00303] c 15 N70-36535  
Rocket engine injector Patent  
[NASA-CASE-XLE-00111] c 28 N70-38199  
Injector assembly for liquid fueled rocket engines Patent  
[NASA-CASE-XMF-00968] c 28 N71-15660  
Injection head for delivering liquid fuel and oxidizers  
[NASA-CASE-NPO-10046] c 28 N72-17843  
Injector for use in high voltage isolators for liquid feed lines  
[NASA-CASE-NPO-11377] c 15 N73-27406  
Supercritical fuel injection system  
[NASA-CASE-LEW-12990-1] c 07 N81-29129  
Low thrust monopropellant engine  
[NASA-CASE-GSC-12184-2] c 20 N82-18314  
Heat pipes to reduce engine exhaust emissions  
[NASA-CASE-LEW-12590-1] c 37 N84-22958  
Low loss injector for liquid propellant rocket engines  
[NASA-CASE-MFS-25989-1] c 20 N87-14420  
Extended temperature range rocket injector  
[NASA-CASE-LEW-14846-1] c 20 N90-15130

**FUEL OILS**

- Oil cooling system for a gas turbine engine  
[NASA-CASE-LEW-12830-1] c 07 N77-23106

**FUEL PUMPS**

- Fuel injection pump for internal combustion engines Patent  
[NASA-CASE-MSC-12139-1] c 28 N71-14058

**FUEL SYSTEMS**

- Propellant feed isolator Patent  
[NASA-CASE-LEW-10210-1] c 28 N71-26781  
System for preconditioning a combustible vapor  
[NASA-CASE-NPO-12072] c 28 N72-22772  
Supersonic-combustion rocket  
[NASA-CASE-LEW-11058-1] c 20 N74-13502  
Fuel combustor  
[NASA-CASE-LEW-12137-1] c 25 N78-10224  
Fuel delivery system including heat exchanger means  
[NASA-CASE-LEW-12793-1] c 37 N79-11403  
Supercritical fuel injection system  
[NASA-CASE-LEW-12990-1] c 07 N81-29129  
Apparatus for improving the fuel efficiency of a gas turbine engine  
[NASA-CASE-LEW-13142-1] c 07 N83-36029  
Method for improving the fuel efficiency of a gas turbine engine  
[NASA-CASE-LEW-13142-2] c 07 N86-20389

**FUEL TANK PRESSURIZATION**

- Venting vapor apparatus Patent  
[NASA-CASE-XLE-00288] c 15 N70-34247  
Automatic pump Patent  
[NASA-CASE-XNP-04731] c 15 N71-24042  
Propellant tank pressurization system Patent  
[NASA-CASE-XNP-00650] c 27 N71-28929

**FUEL TANKS**

- Reduced gravity liquid configuration simulator  
[NASA-CASE-XLE-02624] c 12 N69-39988  
Flexible ring slosh damping baffle Patent  
[NASA-CASE-LAR-10317-1] c 32 N71-16103  
Buoyant anti-slosh system Patent  
[NASA-CASE-XLA-04605] c 32 N71-16106  
Instrument for measuring the dynamic behavior of liquids Patent  
[NASA-CASE-XLA-05541] c 12 N71-26387  
Electrical apparatus for detection of thermal decomposition of insulation Patent  
[NASA-CASE-XMF-03968] c 14 N71-27186  
High performance channel injection sealant invention abstract  
[NASA-CASE-ARC-14408-1] c 27 N82-33523  
Tanker orbit transfer vehicle and method  
[NASA-CASE-MSC-20543-1] c 18 N84-22610

- Cryogenic insulation strength and bond tester  
[NASA-CASE-MFS-25910-1] c 39 N86-20841  
Cryogenic insulation system  
[NASA-CASE-LAR-13506-1] c 27 N89-12741  
Tank gauging apparatus and method  
[NASA-CASE-MSC-21059-1] c 35 N89-12843

**FUEL VALVES**

- Injector-valve device Patent  
[NASA-CASE-XLE-00303] c 15 N70-36535  
Semitoroidal diaphragm cavitating valve Patent  
[NASA-CASE-XNP-09704] c 12 N71-18615  
Filler valve Patent  
[NASA-CASE-XNP-01747] c 15 N71-23024  
Combination automatic-starting electrical plasma torch and gas shutoff valve — for satellite attitude control  
[NASA-CASE-XLE-10717] c 37 N75-29426

**FUEL-AIR RATIO**

- Flow modifying device  
[NASA-CASE-LEW-13562-2] c 07 N85-35195

**FUELS**

- Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-3] c 28 N81-14103

**FUNCTION GENERATORS**

- Line following servosystem Patent  
[NASA-CASE-XAC-00001] c 15 N71-28952  
Digital quasi-exponential function generator  
[NASA-CASE-NPO-11130] c 08 N72-20176  
Electro-mechanical sine/cosine generator  
[NASA-CASE-LAR-10503-1] c 09 N72-21248  
Function generator for synthesizing complex vibration mode patterns  
[NASA-CASE-LAR-10310-1] c 10 N73-20253  
Derivation of a tangent function using an integrated circuit four-quadrant multiplier  
[NASA-CASE-MSC-13907-1] c 10 N73-26230

**FURABLE ANTENNAS**

- Unfurlable structure including coiled strips thrust launched upon tension release Patent  
[NASA-CASE-HQN-00937] c 07 N71-28979  
Singly-curved reflector for use in high-gain antennas  
[NASA-CASE-NPO-11381] c 07 N72-32169  
Furlable antenna — antenna design  
[NASA-CASE-NPO-13553-1] c 33 N76-32457

**FURNACES**

- High-speed infrared furnace  
[NASA-CASE-XLE-10466] c 17 N69-25147  
Black-body furnace Patent  
[NASA-CASE-XLE-01399] c 33 N71-15625  
Induction furnace with perforated tungsten foil shielding Patent  
[NASA-CASE-XLE-04026] c 14 N71-23267  
High temperature furnace for melting materials in space  
[NASA-CASE-MFS-20710] c 11 N72-23215  
High temperature strain gage calibration fixture  
[NASA-CASE-LAR-11500-1] c 35 N76-24523  
Exothermic furnace module  
[NASA-CASE-MFS-25707-1] c 35 N82-26631  
Apparatus and method for heating a material in a transparent ampoule — crystal growth  
[NASA-CASE-MFS-25436-1] c 27 N83-36220  
Apparatus and method for quiescent containerless processing of high temperature metals and alloys in low gravity  
[NASA-CASE-MFS-28087-1] c 35 N87-23944  
Furnace for tensile/fatigue testing  
[NASA-CASE-LEW-14848-1] c 14 N89-28549  
Method of preparing radially homogeneous mercury cadmium telluride crystals  
[NASA-CASE-MFS-25786-2] c 76 N90-20896  
High temperature electric arc furnace and method  
[NASA-CASE-MFS-28281-1] c 09 N90-23415

**FUSELAGES**

- Fuselage structure using advanced technology fiber reinforced composites  
[NASA-CASE-LAR-11688-1] c 24 N82-26384  
Adapter for mounting a microphone flush with the external surface of the skin of a pressurized aircraft  
[NASA-CASE-FRC-11072-1] c 05 N83-27975  
Helicopter anti-torque system using strakes  
[NASA-CASE-LAR-13233-1] c 05 N84-33400  
Multi-body aircraft with an all-movable center fuselage actively controlling fuselage pressure drag  
[NASA-CASE-LAR-13511-1] c 05 N88-23765  
Helicopter anti-torque system using fuselage strakes  
[NASA-CASE-LAR-13630-1] c 08 N88-23809

**FUSION (MELTING)**

- Bonding graphite with fused silver chloride  
[NASA-CASE-XGS-00963] c 15 N69-39735  
Method for fiberizing ceramic materials Patent  
[NASA-CASE-XNP-00597] c 18 N71-23088  
One-step dual purpose joining technique  
[NASA-CASE-LAR-12595-1] c 33 N82-26571  
Absorbable-susceptor joining of ceramic surfaces  
[NASA-CASE-NPO-15640-1] c 27 N84-22748

- Multicolor printing plate joining  
[NASA-CASE-LEW-13598-1] c 35 N84-22930  
Induction heating gun  
[NASA-CASE-LAR-13181-1] c 31 N85-29083

**FUSION WELDING**

- Method for producing a solar cell having an integral protective covering  
[NASA-CASE-XGS-04531] c 03 N69-24267  
Weld control system using thermocouple wire Patent  
[NASA-CASE-MFS-06074] c 15 N71-20393  
Butt welder for fine gauge tungsten/rhenium thermocouple wire  
[NASA-CASE-LAR-10103-1] c 15 N73-14468  
Diffusion welding in air — solid state welding of butt joint by fusion welding, surface cleaning, and heating  
[NASA-CASE-LEW-11387-1] c 37 N74-18128

**G****GADOLINIUM**

- Method of making a silicon semiconductor device Patent  
[NASA-CASE-XLE-02792] c 26 N71-10607  
Gd or Sm doped silicon semiconductor composition Patent  
[NASA-CASE-XLE-10715] c 26 N71-23292

**GALILEO PROJECT**

- Reed-Solomon decoder  
[NASA-CASE-NPO-15982-1] c 60 N87-21591

**GALLIUM**

- Floating two force component measuring device Patent  
[NASA-CASE-XAC-04885] c 14 N71-23790

**GALLIUM ARSENIDES**

- GaAs solar detector using manganese as a doping agent Patent  
[NASA-CASE-XNP-01328] c 26 N71-18064  
Simple method of making photovoltaic junctions Patent  
[NASA-CASE-XNP-01960] c 09 N71-23027  
Method of changing the conductivity of vapor deposited gallium arsenide by the introduction of water into the vapor deposition atmosphere Patent  
[NASA-CASE-XNP-01961] c 26 N71-29156  
Vapor phase growth of groups 3-5 compounds by hydrogen chloride transport of the elements  
[NASA-CASE-LAR-11144-1] c 25 N75-26043  
Vapor deposition apparatus — semiconductors and gallium arsenides  
[NASA-CASE-HQN-10462] c 25 N75-29192  
GaAs Schottky barrier photo-responsive device and method of fabrication  
[NASA-CASE-GSC-12816-1] c 76 N86-20150  
Liquid encapsulated crystal growth  
[NASA-CASE-NPO-16808-1-CU] c 76 N87-25868  
MBE growth technology for high quality strained III-V layers  
[NASA-CASE-NPO-17723-1-CU] c 76 N90-26685

**GALLIUM PHOSPHIDES**

- Liquid encapsulated crystal growth  
[NASA-CASE-NPO-16808-1-CU] c 76 N87-25868  
Annealing group III-V compound doped silicon-germanium alloy for improved thermo-electric conversion efficiency  
[NASA-CASE-NPO-17259-1-CU] c 76 N90-19884

**GALVANIC SKIN RESPONSE**

- Method and apparatus for attaching physiological monitoring electrodes Patent  
[NASA-CASE-XFR-07658-1] c 05 N71-26293

**GAMMA RAY SPECTROMETERS**

- Low intensity X-ray and gamma-ray spectrometer  
[NASA-CASE-GSC-12587-1] c 35 N82-32659  
Method and apparatus for mapping the distribution of chemical elements in an extended medium  
[NASA-CASE-GSC-12808-1] c 25 N85-21279

**GAMMA RAYS**

- Compton scatter attenuation gamma ray spectrometer  
[NASA-CASE-MFS-21441-1] c 14 N73-30392  
Low intensity X-ray and gamma-ray imaging device — fiber optics  
[NASA-CASE-GSC-12263-1] c 74 N79-20857  
Real-time 3-D X-ray and gamma-ray viewer  
[NASA-CASE-GSC-12640-1] c 74 N84-11920  
Three-dimensional and tomographic imaging device for X-ray and gamma-ray emitting objects  
[NASA-CASE-GSC-12851-1] c 35 N85-30281

**GANTRY CRANES**

- Mechanically extendible telescoping boom  
[NASA-CASE-NPO-11118] c 03 N72-25021

**GAPS**

- Electromagnetic transducer recording head having a laminated core section and tapered gap  
[NASA-CASE-NPO-10711-1] c 35 N77-21392  
Method of making a high voltage V-groove solar cell  
[NASA-CASE-LEW-13401-1] c 44 N82-29709



## GARMENTS

- Biomedical electrode arrangement Patent  
[NASA-CASE-XFR-10856] c 05 N71-11189  
Flexible joint for pressurizable garment  
[NASA-CASE-MS-11072] c 54 N74-32546  
Spacesuit torso closure  
[NASA-CASE-ARC-11100-1] c 54 N78-31736  
Urine collection apparatus — feminine hygiene  
[NASA-CASE-MS-18381-1] c 52 N81-28740  
Thermal garment  
[NASA-CASE-XMS-03694-1] c 54 N82-29002

## GAS ANALYSIS

- Gas analyzer for bi-gaseous mixtures Patent  
[NASA-CASE-XLA-01131] c 14 N71-10774  
Microbalance including crystal oscillators for measuring contaminants in a gas system Patent  
[NASA-CASE-NPO-10144] c 14 N71-17701  
Time of flight mass spectrometer with feedback means from the detector to the low source and a specific counter Patent  
[NASA-CASE-XNP-01056] c 14 N71-23041  
Dual resonant cavity absorption cell Patent  
[NASA-CASE-LAR-10305] c 14 N71-26137  
Ion microprobe mass spectrometer for analyzing fluid materials Patent  
[NASA-CASE-ERC-10014] c 14 N71-28863  
Nondispersive gas analyzing method and apparatus wherein radiation is serially passed through a reference and unknown gas  
[NASA-CASE-ARC-10308-1] c 06 N72-31141  
Method and apparatus for determining the contents of contained gas samples  
[NASA-CASE-GSC-10903-1] c 14 N73-12444  
Coaxial anode wire for gas radiation counters  
[NASA-CASE-GSC-11492-1] c 35 N74-26949  
Fast scan control for deflection type mass spectrometers  
[NASA-CASE-LAR-11428-1] c 35 N74-34857  
NDIR gas analyzer based on absorption modulation ratios for known and unknown samples  
[NASA-CASE-ARC-10802-1] c 35 N75-30502  
Stack plume visualization system  
[NASA-CASE-LAR-11675-1] c 45 N76-17656  
Nulling device for detection of trace gases by NDIR absorption  
[NASA-CASE-ARC-10760-1] c 25 N76-22323  
Analysis of volatile organic compounds — trace amounts of organic volatiles in gas samples  
[NASA-CASE-MS-14428-1] c 23 N77-17161  
Fluid sampling device  
[NASA-CASE-GSC-12143-1] c 35 N77-32456  
Stark cell optoacoustic detection of constituent gases in sample  
[NASA-CASE-NPO-14143-1] c 25 N81-14015  
Stark effect spectrophone for continuous absorption spectra monitoring — a technique for gas analysis  
[NASA-CASE-NPO-15102-1] c 25 N81-25159  
Method and device for determining heats of combustion of gaseous hydrocarbons  
[NASA-CASE-LAR-13528-1] c 25 N88-29002  
Device for quickly sensing the amount of O<sub>2</sub> in a combustion product gas  
[NASA-CASE-LAR-13816-1] c 35 N90-22025

## GAS BAGS

- Omnidirectional multiple impact landing system Patent  
[NASA-CASE-XLA-09881] c 31 N71-16085

## GAS BEARINGS

- Externally pressurized fluid bearing Patent  
[NASA-CASE-XMF-00515] c 15 N70-34664  
Slit regulated gas journal bearing Patent  
[NASA-CASE-XNP-00476] c 15 N70-38620  
Air bearing Patent  
[NASA-CASE-XMF-00339] c 15 N70-39896  
Air bearing Patent  
[NASA-CASE-XMF-01887] c 15 N71-10617  
Fluid power transmission Patent  
[NASA-CASE-XMS-01445] c 12 N71-16031  
Bismuth-lead coatings for gas bearings used in atmospheric environments and vacuum chambers Patent  
[NASA-CASE-XGS-02011] c 15 N71-20739  
Swivel support for gas bearings Patent  
[NASA-CASE-XMF-07808] c 15 N71-23812  
Fluid power transmitting gas bearing Patent  
[NASA-CASE-ERC-10097] c 15 N71-28465  
Angular displacement indicating gas bearing support system Patent  
[NASA-CASE-XLA-09346] c 15 N71-28740  
Air bearing assembly for curved surfaces  
[NASA-CASE-MFS-20423] c 15 N72-11388  
Air bearing  
[NASA-CASE-WLP-10002] c 15 N72-17451  
Axially and radially controllable magnetic bearing  
[NASA-CASE-GSC-11551-1] c 37 N76-18459  
Thrust bearing  
[NASA-CASE-LEW-11949-1] c 37 N76-29588

- Cantilever mounted resilient pad gas bearing  
[NASA-CASE-LEW-12569-1] c 37 N79-10418  
Compliant hydrodynamic fluid journal bearing  
[NASA-CASE-LEW-13870-1] c 37 N88-19606

## GAS CHROMATOGRAPHY

- Micropacked column for a chromatographic system  
[NASA-CASE-XNP-04816] c 06 N69-39936  
Baseline stabilization system for ionization detector Patent  
[NASA-CASE-XNP-03128] c 10 N70-41991  
Procedure and apparatus for determination of water in nitrogen tetroxide  
[NASA-CASE-NPO-10234] c 06 N72-17094  
Analysis of hydrogen-deuterium mixtures  
[NASA-CASE-NPO-11322] c 06 N72-25146  
Ultraviolet atomic emission detector  
[NASA-CASE-HQN-10756-1] c 14 N72-25428  
Method and apparatus for determining the contents of contained gas samples  
[NASA-CASE-GSC-10903-1] c 14 N73-12444  
Gas chromatograph injection system  
[NASA-CASE-ARC-10344-2] c 35 N75-26334  
Chelate-modified polymers for atmospheric gas chromatography  
[NASA-CASE-ARC-11154-1] c 25 N80-23383

## GAS COMPOSITION

- Method and means for helium/hydrogen ratio measurement by alpha scattering  
[NASA-CASE-NPO-14079-1] c 25 N80-20334  
Microwave limb sounder — measuring trace gases in the upper atmosphere  
[NASA-CASE-NPO-14544-1] c 46 N82-12685  
Mobile sampler for use in acquiring samples of terrestrial atmospheric gases  
[NASA-CASE-NPO-15220-1] c 45 N83-25217  
Moisture content and gas sampling device  
[NASA-CASE-MS-18866-1] c 35 N85-29213

## GAS COOLED REACTORS

- Gas core nuclear reactor Patent  
[NASA-CASE-LEW-10250-1] c 22 N71-28759

## GAS COOLING

- Refrigeration apparatus  
[NASA-CASE-NPO-10309] c 15 N69-23190  
Gas cooled high temperature thermocouple Patent  
[NASA-CASE-XLE-09475-1] c 33 N71-15568  
Apparatus and method for heating a material in a transparent ampoule — crystal growth  
[NASA-CASE-MFS-25436-1] c 27 N83-36220

## GAS DENSITY

- Dynamic sensor Patent  
[NASA-CASE-XAC-02877] c 14 N70-41681  
Method for measuring the characteristics of a gas Patent  
[NASA-CASE-XLA-03375] c 16 N71-24074  
Device for measuring light scattering wherein the measuring beam is successively reflected between a pair of parallel reflectors Patent  
[NASA-CASE-XER-11203] c 14 N71-28994  
Gaseous control system for nuclear reactors  
[NASA-CASE-XLE-04599] c 22 N72-20597  
Method of producing crystalline materials  
[NASA-CASE-NPO-10440] c 15 N72-21466  
Wide range dynamic pressure sensor  
[NASA-CASE-ARC-10263-1] c 14 N72-22438  
Apparatus for absolute pressure measurement  
[NASA-CASE-LAR-10000] c 14 N73-30394  
Method and apparatus for compensating reflection losses in a path length modulated absorption-absorption trace gas detector — for determining density of gas  
[NASA-CASE-ARC-10631-1] c 74 N76-20958  
Method and apparatus for convection control of metallic halide vapor density in a metallic halide laser  
[NASA-CASE-NPO-15021-1] c 36 N83-10417

## GAS DETECTORS

- Method for detecting hydrogen gas  
[NASA-CASE-XMF-03873] c 06 N69-39733  
Hydrogen leak detection device Patent  
[NASA-CASE-MFS-11537] c 14 N71-20442  
Leak detector wherein a probe is monitored with ultraviolet radiation Patent  
[NASA-CASE-ERC-10034] c 15 N71-24896  
Miniature carbon dioxide sensor and methods  
[NASA-CASE-MS-13332-1] c 14 N72-21408  
Fluorescence detector for monitoring atmospheric pollutants  
[NASA-CASE-NPO-13231-1] c 45 N75-27585  
Carbon monoxide monitor — using real time operation  
[NASA-CASE-MFS-22060-1] c 35 N75-29380  
Method and apparatus for compensating reflection losses in a path length modulated absorption-absorption trace gas detector — for determining density of gas  
[NASA-CASE-ARC-10631-1] c 74 N76-20958  
Indicator providing continuous indication of the presence of a specific pollutant in air  
[NASA-CASE-NPO-13474-1] c 45 N76-21742

- Particulate and aerosol detector  
[NASA-CASE-LAR-11434-1] c 35 N76-22509  
Cryogenic liquid sensor  
[NASA-CASE-NPO-10619-1] c 35 N77-21393  
Optically selective, acoustically resonant gas detecting transducer  
[NASA-CASE-ARC-10639-1] c 35 N78-13400  
Stark cell optoacoustic detection of constituent gases in sample  
[NASA-CASE-NPO-14143-1] c 25 N81-14015  
Stark effect spectrophone for continuous absorption spectra monitoring — a technique for gas analysis  
[NASA-CASE-NPO-15102-1] c 25 N81-25159  
Portable remote laser sensor for methane leak detection  
[NASA-CASE-NPO-15790-1] c 36 N85-21631

## GAS DISCHARGE TUBES

- Self-repeating plasma generator having communicating annular and linear arc discharge passages Patent  
[NASA-CASE-XLA-03103] c 25 N71-21693

## GAS DISCHARGES

- Parametric microwave noise generator Patent  
[NASA-CASE-XER-11019] c 09 N71-23598  
Multiplex electric discharge gas laser system  
[NASA-CASE-NPO-16433-1] c 36 N87-23961

## GAS EVOLUTION

- Filter system for control of outgas contamination in vacuum Patent  
[NASA-CASE-MFS-14711] c 15 N71-26185

## GAS EXPANSION

- Sealed battery gas manifold construction Patent  
[NASA-CASE-XNP-03378] c 03 N71-11051  
Refrigeration apparatus Patent  
[NASA-CASE-XNP-08877] c 15 N71-23025  
Gas operated actuator  
[NASA-CASE-NPO-11340] c 15 N72-33477  
Multicomponent gas sorption Joule-Thomson refrigerator  
[NASA-CASE-NPO-17569-1-CU] c 31 N90-26176

## GAS FLOW

- Fluid flow restrictor Patent  
[NASA-CASE-NPO-10117] c 15 N71-15608  
High pressure gas filter system Patent  
[NASA-CASE-MFS-12806] c 14 N71-17588  
Burst diaphragm flow initiator Patent  
[NASA-CASE-MFS-12915] c 11 N71-17600  
Method of recording a gas flow pattern Patent  
[NASA-CASE-XMF-01779] c 12 N71-20815  
Respiration monitor  
[NASA-CASE-FRC-10012] c 14 N72-17329  
Shock tube bypass piston tunnel  
[NASA-CASE-NPO-12109] c 11 N72-22245  
Fluidic proportional thruster system  
[NASA-CASE-ARC-10106-1] c 28 N72-22769  
Gas filter mounting structure  
[NASA-CASE-MS-12297] c 14 N72-23457  
Pressurized lighting system  
[NASA-CASE-KSC-10644] c 09 N72-27227  
Method for controlling vapor content of a gas  
[NASA-CASE-NPO-10633] c 03 N72-28025  
Gas flow control device  
[NASA-CASE-NPO-11479] c 15 N73-13462  
Compact hydrogenator  
[NASA-CASE-NPO-11682-1] c 35 N74-15127  
Apparatus for establishing flow of a fluid mass having a known velocity  
[NASA-CASE-MFS-21424-1] c 34 N74-27730  
Condensate removal device for heat exchanger  
[NASA-CASE-MS-14143-1] c 77 N75-20139  
Flow measuring apparatus  
[NASA-CASE-LEW-12078-1] c 35 N75-30503  
Gas compression apparatus  
[NASA-CASE-MS-14757-1] c 35 N78-10428  
Variable cycle gas turbine engines  
[NASA-CASE-LEW-12916-1] c 37 N78-17384  
Covering solid, film cooled surfaces with a duplex thermal barrier coating  
[NASA-CASE-LEW-13450-1] c 31 N83-35177  
Apparatus and method for destructive removal of particles contained in flowing fluid  
[NASA-CASE-NPO-15426-1] c 35 N84-17555  
Vortex generating flow passage design for increased film cooling effectiveness  
[NASA-CASE-LEW-14039-1] c 34 N85-33433  
Technique for measuring gas conversion factors  
[NASA-CASE-LAR-13220-1] c 34 N86-12547  
Low noise lead screw positioner  
[NASA-CASE-NPO-15617-1] c 35 N87-21304
- GAS GENERATORS**  
Specialized halogen generator for purification of water Patent  
[NASA-CASE-XLA-08913] c 14 N71-28933  
Quick disconnect coupling  
[NASA-CASE-NPO-11202] c 15 N72-25450  
Electrolytic gas operated actuator  
[NASA-CASE-NPO-11369] c 15 N73-13467



- Vortex breech high pressure gas generator  
[NASA-CASE-LAR-10549-1] c 31 N73-13898
- Hydrogen rich gas generator  
[NASA-CASE-NPO-13342-1] c 37 N76-16446
- Hydrogen-rich gas generator  
[NASA-CASE-NPO-13484-1] c 44 N76-18642
- Hydrogen rich gas generator  
[NASA-CASE-NPO-13342-2] c 44 N76-29700
- Hydrogen rich gas generator  
[NASA-CASE-NPO-13464-2] c 44 N76-29704
- Hydrogen-rich gas generator  
[NASA-CASE-NPO-13560-1] c 44 N77-10636
- GAS GUNS**
- Electric arc device for heating gases Patent  
[NASA-CASE-XAC-00319] c 25 N70-41628
- GAS HEATING**
- Bimetallic fluid displacement apparatus — for stirring and heating stored gases and liquids  
[NASA-CASE-ARC-10441-1] c 35 N74-15126
- GAS INJECTION**
- Burning rate control of solid propellants Patent  
[NASA-CASE-XLE-03494] c 27 N71-21819
- Compact hydrogenator  
[NASA-CASE-NPO-11682-1] c 35 N74-15127
- Gas chromatograph injection system  
[NASA-CASE-ARC-10344-2] c 35 N75-26334
- In-situ laser retorting of oil shale  
[NASA-CASE-LEW-12217-1] c 43 N78-14452
- Gas turbine engine with recirculating bleed  
[NASA-CASE-LEW-12452-1] c 07 N78-25089
- Ozonation of cooling tower waters  
[NASA-CASE-NPO-13430-1] c 45 N80-14579
- Solid sorbent air sampler  
[NASA-CASE-MSC-20653-1] c 35 N86-26595
- GAS IONIZATION**
- Electrostatic plasma modulator for space vehicle re-entry communication Patent  
[NASA-CASE-XLA-01400] c 07 N70-41331
- A multichannel photoionization chamber for absorption analysis Patent  
[NASA-CASE-ERC-10044-1] c 14 N71-27090
- Modulated hydrogen ion flame detector  
[NASA-CASE-ARC-10322-1] c 35 N76-18403
- Gas ion laser construction for electrically isolating the pressure gauge thereof  
[NASA-CASE-MFS-22597] c 36 N78-17366
- Charge transfer reaction laser with preionization means  
[NASA-CASE-NPO-13945-1] c 36 N78-27402
- Hydrogen hollow cathode ion source  
[NASA-CASE-LEW-12940-1] c 72 N80-33186
- Reversal electron attachment ionizer for detection of trace species  
[NASA-CASE-NPO-17596-1-CU] c 35 N89-28795
- GAS JETS**
- Apparatus and method to keep the walls of a free-space reactor free from deposits of solid materials  
[NASA-CASE-NPO-15851-1] c 37 N85-21652
- GAS LASERS**
- Method and apparatus for stabilizing a gaseous optical maser Patent  
[NASA-CASE-XGS-03644] c 16 N71-18614
- Inert gas metallic vapor laser  
[NASA-CASE-NPO-13449-1] c 36 N75-32441
- Diffused waveguiding capillary tube with distributed feedback for a gas laser  
[NASA-CASE-NPO-13544-1] c 36 N76-18428
- Gas ion laser construction for electrically isolating the pressure gauge thereof  
[NASA-CASE-MFS-22597] c 36 N78-17366
- Charge transfer reaction laser with preionization means  
[NASA-CASE-NPO-13945-1] c 36 N78-27402
- Solar pumped laser  
[NASA-CASE-LAR-12870-1] c 36 N84-16542
- Spectrophone stabilized laser with line center offset frequency control  
[NASA-CASE-NPO-15516-1] c 36 N84-22943
- Long gain length solar pumped box laser  
[NASA-CASE-LAR-13256-1] c 36 N86-29204
- GAS LUBRICANTS**
- Gas lubricant compositions Patent  
[NASA-CASE-XLE-00353] c 18 N70-39897
- Thrust bearing  
[NASA-CASE-LEW-11949-1] c 37 N76-29588
- Cantilever mounted resilient pad gas bearing  
[NASA-CASE-LEW-12569-1] c 37 N79-10418
- Dual clearance squeeze film damper  
[NASA-CASE-LEW-13506-1] c 37 N85-33490
- GAS MASERS**
- Solid state chemical source for ammonia beam maser Patent  
[NASA-CASE-XGS-01504] c 16 N70-41578
- Atomic hydrogen maser with bulb temperature control to remove wall shift in maser output frequency  
[NASA-CASE-HQN-10654-1] c 16 N73-13489
- Method of producing a storage bulb for an atomic hydrogen maser  
[NASA-CASE-NPO-13050-1] c 36 N75-15029
- Atomic standard with variable storage volume  
[NASA-CASE-GSC-11895-1] c 35 N76-15436
- GAS MIXTURES**
- Gas analyzer for bi-gaseous mixtures Patent  
[NASA-CASE-XLA-01131] c 14 N71-10774
- Vapor pressure measuring system and method Patent  
[NASA-CASE-XMS-01618] c 14 N71-20741
- Mixture separation cell Patent  
[NASA-CASE-XMS-02952] c 18 N71-20742
- Analysis of hydrogen-deuterium mixtures  
[NASA-CASE-NPO-11322] c 06 N72-25146
- Hydrogen rich gas generator  
[NASA-CASE-NPO-13342-2] c 44 N76-29700
- Hydrogen-rich gas generator  
[NASA-CASE-NPO-13560-1] c 44 N77-10636
- Chemical vapor deposition reactor — providing uniform film thickness  
[NASA-CASE-NPO-13650-1] c 25 N79-28253
- Multicomponent gas sorption Joule-Thomson refrigerator  
[NASA-CASE-NPO-17569-1-CU] c 31 N90-26176
- GAS PIPES**
- Fluid flow restrictor Patent  
[NASA-CASE-NPO-10117] c 15 N71-15608
- Trailer shield assembly for a welding torch  
[NASA-CASE-MFS-29260-1] c 37 N90-19602
- GAS PRESSURE**
- Measuring device Patent  
[NASA-CASE-XMS-01546] c 14 N70-40233
- Dynamic sensor Patent  
[NASA-CASE-XAC-02877] c 14 N70-41681
- Wide range dynamic pressure sensor  
[NASA-CASE-ARC-10263-1] c 14 N72-22438
- Measurement of gas production of microorganisms — using pressure sensors  
[NASA-CASE-LAR-11326-1] c 35 N75-33368
- Depressurization of arc lamps  
[NASA-CASE-NPO-10790-1] c 33 N77-21316
- Pressure limiting propellant actuating system  
[NASA-CASE-MSC-18179-1] c 20 N80-18097
- Method and apparatus for producing gas-filled hollow spheres — target pellets for inertial confinement fusion  
[NASA-CASE-NPO-14596-3] c 31 N83-31896
- GAS STREAMS**
- Method for measuring the characteristics of a gas Patent  
[NASA-CASE-XLA-03375] c 16 N71-24074
- Stagnation pressure probe — for measuring pressure of supersonic gas streams  
[NASA-CASE-LAR-11139-1] c 35 N74-32878
- Variable mixer propulsion cycle  
[NASA-CASE-LEW-12917-1] c 07 N78-18067
- Simultaneous treatment of SO<sub>2</sub> containing stack gases and waste water  
[NASA-CASE-MSC-16258-1] c 45 N79-12584
- Gas levitator having fixed levitation node for containerless processing  
[NASA-CASE-MFS-25509-1] c 35 N83-24828
- GAS TEMPERATURE**
- Method for measuring the characteristics of a gas Patent  
[NASA-CASE-XLA-03375] c 16 N71-24074
- GAS TRANSPORT**
- Purging means and method for Xenon arc lamps  
[NASA-CASE-NPO-11978] c 31 N78-17238
- GAS TUBES**
- Toggle mechanism for pinching metal tubes  
[NASA-CASE-GSC-12274-1] c 37 N79-28550
- GAS TUNGSTEN ARC WELDING**
- Electrode carrying wire for GTAW welding  
[NASA-CASE-MFS-29491-1] c 31 N89-23738
- Internal wire guide for GTAW welding  
[NASA-CASE-MFS-29489-1] c 31 N90-23586
- Electrode carrying wire for GTAW welding  
[NASA-CASE-MFS-29491-1] c 31 N90-26168
- GAS TURBINE ENGINES**
- Gas turbine engine fuel control  
[NASA-CASE-LEW-11187-1] c 28 N73-19793
- Swirl can primary combustor  
[NASA-CASE-LEW-11326-1] c 23 N73-30665
- Controlled separation combustor — airflow distribution in gas turbine engines  
[NASA-CASE-LEW-11593-1] c 20 N76-14190
- Fused silicide coatings containing discrete particles for protecting niobium alloys — used in space shuttle thermal protection systems and turbine engine components  
[NASA-CASE-LEW-11179-1] c 27 N76-16229
- Dual output variable pitch turbofan actuation system  
[NASA-CASE-LEW-12419-1] c 07 N77-14025
- Oil cooling system for a gas turbine engine  
[NASA-CASE-LEW-12830-1] c 07 N77-23106
- Blade retainer assembly  
[NASA-CASE-LEW-12608-1] c 07 N77-27116
- Nickel base alloy — for gas turbine engine stator vanes  
[NASA-CASE-LEW-12270-1] c 26 N77-32280
- Bearing seal usable in a gas turbine engine  
[NASA-CASE-LEW-12477-1] c 37 N77-32501
- Oil cooling system for a gas turbine engine  
[NASA-CASE-LEW-12321-1] c 37 N78-10467
- Variable cycle gas turbine engines  
[NASA-CASE-LEW-12916-1] c 37 N78-17384
- Integrated gas turbine engine-nacelle  
[NASA-CASE-LEW-12389-2] c 07 N78-18066
- Variable mixer propulsion cycle  
[NASA-CASE-LEW-12917-1] c 07 N78-18067
- Automotive gas turbine fuel control  
[NASA-CASE-LEW-12785-1] c 37 N78-24545
- Gas turbine engine with recirculating bleed  
[NASA-CASE-LEW-12452-1] c 07 N78-25089
- Independent power generator  
[NASA-CASE-LAR-11208-1] c 44 N78-32539
- Redundant disc  
[NASA-CASE-LEW-12496-1] c 07 N78-33101
- Integrated gas turbine engine-nacelle  
[NASA-CASE-LEW-12389-3] c 07 N79-14096
- Variable area exhaust nozzle  
[NASA-CASE-LEW-12378-1] c 07 N79-14097
- Power control for hot gas engines  
[NASA-CASE-NPO-14220-1] c 37 N81-14318
- Curved centerline air intake for a gas turbine engine  
[NASA-CASE-LEW-13201-1] c 07 N81-14999
- Apparatus for sensor failure detection and correction in a gas turbine engine control system  
[NASA-CASE-LEW-12907-2] c 07 N81-19115
- Active clearance control system for a turbomachine  
[NASA-CASE-LEW-12938-1] c 07 N82-32366
- Control means for a gas turbine engine  
[NASA-CASE-LEW-14586-1] c 07 N83-31603
- Silicon-slurry/aluminide coating — protecting gas turbine engine vanes and blades  
[NASA-CASE-LEW-13343] c 26 N83-31795
- Apparatus for improving the fuel efficiency of a gas turbine engine  
[NASA-CASE-LEW-13142-1] c 07 N83-36029
- Tip cap for a rotor blade  
[NASA-CASE-LEW-13654-1] c 07 N84-22560
- Combustor liner construction  
[NASA-CASE-LEW-14035-1] c 07 N84-24577
- Air modulation apparatus  
[NASA-CASE-LEW-13524-1] c 07 N84-33410
- Dual clearance squeeze film damper  
[NASA-CASE-LEW-13506-1] c 37 N85-33490
- Compliant hydrodynamic fluid journal bearing  
[NASA-CASE-LEW-13670-1] c 37 N86-19606
- Method for improving the fuel efficiency of a gas turbine engine  
[NASA-CASE-LEW-13142-2] c 07 N86-20389
- Thermal stress minimized, two component, turbine shroud seal  
[NASA-CASE-LEW-14212-1] c 37 N88-23978
- GAS TURBINES**
- Gas turbine combustor Patent  
[NASA-CASE-LEW-10286-1] c 28 N71-28915
- Gas turbine exhaust nozzle — for noise reduction  
[NASA-CASE-LEW-11569-1] c 07 N74-15453
- Gas turbine engine with convertible accessories  
[NASA-CASE-LEW-12390-1] c 07 N78-17056
- Counter pumping debris excluder and separator — gas turbine shaft seals  
[NASA-CASE-LEW-11855-1] c 07 N78-25090
- Direct heating surface combustor  
[NASA-CASE-LEW-11877-1] c 34 N78-27357
- Apparatus and method for reducing thermal stress in a turbine rotor  
[NASA-CASE-LEW-12232-1] c 07 N79-10057
- Method and turbine for extracting kinetic energy from a stream of two-phase fluid  
[NASA-CASE-NPO-14130-1] c 34 N79-20335
- Corrosion resistant thermal barrier coating — protecting gas turbines and other engine parts  
[NASA-CASE-LEW-13088-1] c 26 N81-25188
- GAS VALVES**
- High-temperature, high-pressure spherical segment valve Patent  
[NASA-CASE-XAC-00074] c 15 N70-34817
- Shrink-fit gas valve Patent  
[NASA-CASE-XGS-00587] c 15 N70-35087
- Thermally operated valve Patent  
[NASA-CASE-XLE-00815] c 15 N70-35407
- Transfer valve Patent  
[NASA-CASE-XAC-01158] c 15 N71-23051
- Slow opening valve — valve design for shuttle portable oxygen system  
[NASA-CASE-MSC-20112-1] c 37 N85-20338
- Zero-G phase detector and separator  
[NASA-CASE-LEW-14844-1] c 35 N90-22024

## GAS WELDING

- Spectral method for monitoring atmospheric contamination of inert-gas welding shields Patent  
[NASA-CASE-XMF-02039] c 15 N71-15871
- Grain refinement control in TIG arc welding  
[NASA-CASE-MSC-19095-1] c 37 N75-19683

## GAS-LIQUID INTERACTIONS

- Fluid control apparatus and method  
[NASA-CASE-LAR-11110-1] c 34 N75-26282

## GAS-METAL INTERACTIONS

- Improved refractory coatings — sputtered coatings on substrates that form stable nitrides  
[NASA-CASE-LEW-23169-2] c 26 N81-16209
- Refractory coatings and method of producing the same  
[NASA-CASE-LEW-13169-1] c 26 N82-29415

## GASDYNAMIC LASERS

- Diatom infrared gasdynamic laser — for producing different wavelengths  
[NASA-CASE-ARC-10370-1] c 36 N75-31426

## GASEOUS DIFFUSION

- Gas purged dry box glove Patent  
[NASA-CASE-XLE-02531] c 05 N71-23080
- Gas core nuclear reactor Patent  
[NASA-CASE-LEW-10250-1] c 22 N71-28759
- Gas diffusion liquid storage bag and method of use for storing blood  
[NASA-CASE-NPO-13930-1] c 52 N79-14749

## GASEOUS FISSION REACTORS

- Gas core nuclear reactor Patent  
[NASA-CASE-LEW-10250-1] c 22 N71-28759

## GASEOUS ROCKET PROPELLANTS

- Ion rocket Patent  
[NASA-CASE-XLE-00376] c 28 N70-37245
- Continuous detonation reaction engine Patent  
[NASA-CASE-XMF-06926] c 28 N71-22983

## GASES

- Gas liquefaction and dispensing apparatus Patent  
[NASA-CASE-NPO-10070] c 15 N71-27372
- Observation window for a gas confining chamber  
[NASA-CASE-NPO-10890] c 11 N73-12265
- Combustion detector  
[NASA-CASE-LAR-10739-1] c 14 N73-16484
- Low gravity phase separator  
[NASA-CASE-MSC-14773-1] c 35 N78-12390
- Water separator  
[NASA-CASE-XMS-01295-1] c 37 N79-21345
- Tank gauging apparatus and method  
[NASA-CASE-MSC-21059-1] c 35 N89-12843
- System for venting gas from a liquid storage tank  
[NASA-CASE-MSC-21253-1] c 31 N90-20254

## GASIFICATION

- Mixed polyvalent-monovalent metal coating for carbon-graphite fibers  
[NASA-CASE-NPO-14987-1] c 24 N83-33950

## GASKETS

- Cryogenic connector for vacuum use Patent  
[NASA-CASE-XGS-02441] c 15 N70-41629
- Reinforced polyquinoxaline gasket and method of preparing the same — resistant to ionizing radiation and liquid hydrogen temperatures  
[NASA-CASE-MFS-21384-1] c 37 N74-18126
- Process for preparing perfluorotriazine elastomers and precursors thereof  
[NASA-CASE-ARC-11402-1] c 27 N84-22744
- O-ring gasket test fixture  
[NASA-CASE-MFS-28376-1] c 14 N89-28546

## GATES (CIRCUITS)

- Flux sensing device using a tubular core with toroidal gating coil and solenoidal output coil wound thereon Patent  
[NASA-CASE-XGS-01881] c 09 N70-40123
- SCR blocking pulse gate amplifier Patent  
[NASA-CASE-XLA-07497] c 09 N71-12514
- Logic AND gate for fluid circuits Patent  
[NASA-CASE-XLA-07391] c 12 N71-17579
- Synchronous counter Patent  
[NASA-CASE-XGS-02440] c 08 N71-19432
- Increasing efficiency of switching type regulator circuits Patent  
[NASA-CASE-XMS-09352] c 09 N71-23316
- Memory device for two-dimensional radiant energy array computers  
[NASA-CASE-GSC-11839-2] c 60 N78-10709
- Transformer regulated self-stabilizing chopper  
[NASA-CASE-XGS-09186] c 33 N78-17295
- Controller for computer control of brushless dc motors — automobile engines  
[NASA-CASE-NPO-13970-1] c 33 N81-20352
- Combinational logic for generating gate drive signals for phase control rectifiers  
[NASA-CASE-MFS-25208-1] c 33 N83-10345
- Pulsed phase locked loop strain monitor — voltage controlled oscillators  
[NASA-CASE-LAR-12772-1] c 33 N83-16626

- FET charge sensor and voltage probe  
[NASA-CASE-NPO-16045-1] c 76 N87-13313

## GATES (OPENINGS)

- Film feed camera having a detent means Patent  
[NASA-CASE-LAR-10688] c 14 N71-28935

## GAW-1 AIRFOIL

- Airfoil shape for flight at subsonic speeds — design analysis and aerodynamic characteristics of the GAW-1 airfoil  
[NASA-CASE-LAR-10585-1] c 02 N76-22154

## GEAR TEETH

- Wobble gear drive mechanism — for aerospace environments  
[NASA-CASE-WOO-00625] c 37 N78-17385
- Belt for transmitting power from a cogged driving member to a cogged driven member  
[NASA-CASE-GSC-12289-1] c 37 N80-32717

## GEARS

- Precision stepping drive Patent  
[NASA-CASE-MFS-14772] c 15 N71-17692
- Bi-directional step torque filter with zero backlash characteristic Patent  
[NASA-CASE-XGS-04227] c 15 N71-21744
- Self-lubricating gears and other mechanical parts Patent  
[NASA-CASE-MFS-14971] c 15 N71-24984
- Concentric differential gearing arrangement  
[NASA-CASE-ARC-10462-1] c 37 N74-27901
- Sequencing device utilizing planetary gear set  
[NASA-CASE-MSC-19514-1] c 37 N79-20377
- Power control for hot gas engines  
[NASA-CASE-NPO-14220-1] c 37 N81-14318
- Clutchless multiple drive source for output shaft  
[NASA-CASE-ARC-11325-1] c 37 N82-22496
- Directional gear ratio transmissions  
[NASA-CASE-LAR-12644-1] c 37 N84-28084
- Linear force device  
[NASA-CASE-MSC-20549-2] c 35 N88-24927

## GELATION

- Method of controlling a resin curing process — for fiber reinforced composites  
[NASA-CASE-MSC-21169-1] c 27 N89-29539

## GELLED ROCKET PROPELLANTS

- Process of forming particles in a cryogenic path Patent  
[NASA-CASE-NPO-10250] c 23 N71-16212

## GELS

- Intermittent type silica gel adsorption refrigerator Patent  
[NASA-CASE-XNP-00920] c 15 N71-15906
- Cellular thermosetting fluoropolymers and process for making them  
[NASA-CASE-GSC-13008-1] c 27 N88-23894
- Method of dispensing reagent chemicals in space  
[NASA-CASE-LAR-13607-1-CU] c 29 N88-29048
- Wet spinning of solid polyamic acid fibers  
[NASA-CASE-LAR-14162-1] c 27 N90-15259

## GENERAL AVIATION AIRCRAFT

- Explosively activated egress area  
[NASA-CASE-LAR-12624-1] c 01 N83-35992

## GENERATORS

- Apparatus for establishing flow of a fluid mass having a known velocity  
[NASA-CASE-MFS-21424-1] c 34 N74-27730
- Continuous laminar smoke generator  
[NASA-CASE-LAR-13014-1] c 09 N85-21178
- A digitally controlled system for effecting and presenting a selected electrical resistance  
[NASA-CASE-MFS-29149-1] c 33 N90-19492

## GENETIC ENGINEERING

- Human serum albumin crystals and method of preparation  
[NASA-CASE-MFS-28234-1] c 52 N90-20616

## GEODESY

- Geodetic distance measuring apparatus  
[NASA-CASE-GSC-12609-2] c 36 N83-29681

## GEODETIC SURVEYS

- Geodetic distance measuring apparatus  
[NASA-CASE-GSC-12609-1] c 36 N81-22344

## GEODIMETERS

- Geodetic distance measuring apparatus  
[NASA-CASE-GSC-12609-1] c 36 N81-22344

## GEOLOGICAL SURVEYS

- Borehole geological assessment  
[NASA-CASE-NPO-14231-1] c 46 N80-10709
- Geological assessment probe  
[NASA-CASE-NPO-14558-1] c 46 N80-24906

## GEOMETRY

- Space station architecture, module, berthing hub, shell assembly, berthing mechanism and utility connection channel  
[NASA-CASE-ARC-11505-1] c 18 N84-22612
- Ice detector  
[NASA-CASE-LAR-13776-1] c 35 N88-29149

- Improving the geometric fidelity of imaging systems employing sensor arrays  
[NASA-CASE-NPO-17970-1-CU] c 43 N90-26384

## GERMANIUM

- Germanium coated microbridge and method  
[NASA-CASE-MFS-23274-1] c 33 N78-13320

## GERMANIUM ALLOYS

- Annealing group III-V compound doped silicon-germanium alloy for improved thermo-electric conversion efficiency  
[NASA-CASE-NPO-17259-1-CU] c 76 N90-19884

## GIMBALS

- Gimballed, partially submerged rocket nozzle Patent  
[NASA-CASE-XMF-01544] c 28 N70-34162
- Azimuth laying system Patent  
[NASA-CASE-XMF-01669] c 21 N71-23289
- Passive caging mechanism Patent  
[NASA-CASE-GSC-10306-1] c 15 N71-24694
- Hermetic sealed vibration damper Patent  
[NASA-CASE-MSC-10959] c 15 N71-26243
- Bearing and gimbal lock mechanism and spiral flex lead module Patent  
[NASA-CASE-GSC-10556-1] c 31 N71-26537
- Failure detection and control means for improved drift performance of a gimballed platform system  
[NASA-CASE-MFS-23551-1] c 04 N76-26175
- Autonomous navigation system — gyroscopic pendulum for air navigation  
[NASA-CASE-ARC-11257-1] c 04 N81-21047
- Aircraft body-axis rotation measurement system  
[NASA-CASE-FRC-11043-1] c 06 N83-33882

## GLANDS (SEALS)

- Spiral groove seal  
[NASA-CASE-XLE-10326-2] c 15 N72-29488
- Circumferential shaft seal  
[NASA-CASE-LEW-12119-2] c 37 N81-26447

## GLASS

- Method for producing a solar cell having an integral protective covering  
[NASA-CASE-XGS-04531] c 03 N69-24267
- Reduced gravity liquid configuration simulator  
[NASA-CASE-XLE-02624] c 12 N69-39988
- Silicon solar cell with cover glass bonded to cell by metal pattern Patent  
[NASA-CASE-XLE-08569] c 03 N71-23449
- Apparatus for applying cover slides  
[NASA-CASE-NPO-10575] c 03 N72-25019
- Glass-to-metal seals comprising relatively high expansion metals  
[NASA-CASE-LEW-10698-1] c 37 N74-21063
- Covered silicon solar cells and method of manufacture — with polymeric films  
[NASA-CASE-LEW-11065-2] c 44 N76-14600
- Window defect planar mapping technique  
[NASA-CASE-MSC-19442-1] c 74 N77-10899
- Method of forming shrink-fit compression seal  
[NASA-CASE-LAR-11563-1] c 37 N77-23482
- Reaction cured glass and glass coatings  
[NASA-CASE-ARC-11051-1] c 27 N78-32260
- Method of forming frozen spheres in a force-free drop tower  
[NASA-CASE-NPO-14845-1] c 27 N82-28442
- Method for milling and drilling glass  
[NASA-CASE-GSC-12636-1] c 31 N83-27058
- Acoustic bubble removal method  
[NASA-CASE-NPO-15334-1] c 71 N83-35781
- Glass heating panels and method for preparing the same from architectural reflective glass  
[NASA-CASE-NPO-15753-1] c 27 N84-33589

## GLASS COATINGS

- Method of attaching a cover glass to a silicon solar cell Patent  
[NASA-CASE-XLE-08569-2] c 03 N71-24681
- Process for glass coating an ion accelerator grid Patent  
[NASA-CASE-LEW-10278-1] c 15 N71-28582
- Method of coating solar cell with borosilicate glass and resultant product  
[NASA-CASE-GSC-11514-1] c 03 N72-24037
- Transmitting and reflecting diffuser — using ultraviolet grade fused silica coatings  
[NASA-CASE-LAR-10385-3] c 74 N78-15879
- Method for repair of thin glass coatings — on space shuttle orbiter tiles  
[NASA-CASE-KSC-11097-1] c 27 N82-33520
- High temperature glass thermal control structure and coating — for application to spacecraft reusable heat shielding  
[NASA-CASE-ARC-11164-1] c 44 N83-34448

## GLASS ELECTRODES

- Liquid junction and method of fabricating the same Patent Application  
[NASA-CASE-NPO-10682] c 15 N70-34699
- Apparatus and method of inserting a microelectrode in body tissue or the like using vibration means  
[NASA-CASE-NPO-13910-1] c 52 N79-27836

## GLASS FIBER REINFORCED PLASTICS

- Low density bismaleimide-carbon microballoon composites  
[NASA-CASE-ARC-11040-1] c 24 N79-16915  
Method of manufacture of bonded fiber flywheel --- fiberglass-epoxy  
[NASA-CASE-MFS-23674-1] c 24 N81-29163
- GLASS FIBERS**  
Non-magnetic battery case Patent  
[NASA-CASE-XGS-00886] c 03 N71-11053  
Lathe tool bit and holder for machining fiberglass materials  
[NASA-CASE-XLA-10470] c 15 N72-21489  
Polyimide resin-fiberglass cloth laminates for printed circuit boards  
[NASA-CASE-MFS-20408] c 18 N73-12604  
Method of repairing discontinuity in fiberglass structures  
[NASA-CASE-LAR-10416-1] c 24 N74-30001  
Fiber modified polyurethane foam for ballistic protection  
[NASA-CASE-ARC-10714-1] c 27 N76-15310  
Vacuum pressure molding technique  
[NASA-CASE-LAR-10073-1] c 37 N76-24575  
Glass compositions with a high modulus of elasticity --- nontoxic glass fibers  
[NASA-CASE-HQN-10274-1] c 27 N82-29451  
High modulus invert analog glass compositions containing beryllia  
[NASA-CASE-HQN-10931-2] c 27 N82-29452  
Method and technique for installing light-weight, fragile, high-temperature fiber insulation  
[NASA-CASE-MSC-16934-3] c 24 N84-16262  
Containerless high purity pulling process and apparatus for glass fiber  
[NASA-CASE-MFS-25905-2] c 31 N86-21718  
Quasi-containerless glass formation method and apparatus  
[NASA-CASE-MFS-28090-1] c 27 N87-21111
- GLASSWARE**  
Laboratory glassware rack for seismic safety  
[NASA-CASE-ARC-11422-1] c 35 N86-20751
- GLAUCOMA**  
Intra-ocular pressure normalization technique and equipment  
[NASA-CASE-LEW-12955-1] c 52 N80-14684
- GLIDE PATHS**  
Integrated lift/drag controller for aircraft  
[NASA-CASE-ARC-10456-1] c 05 N75-12930
- GLOBAL POSITIONING SYSTEM**  
Navigation system and method  
[NASA-CASE-GSC-12508-1] c 04 N84-22546  
High dynamic global positioning system receiver  
[NASA-CASE-NPO-16171-1CU] c 04 N86-27270  
Multistage estimation of received carrier signal parameters under very high dynamic conditions of the receiver  
[NASA-CASE-NPO-17911-1CU] c 32 N90-27016
- GLOBES**  
Orbital and entry tracking accessory for globes --- to provide range requirements for reentry vehicles to any landing site  
[NASA-CASE-LAR-10626-1] c 19 N74-21015
- GLOVES**  
Gas purged dry box glove Patent  
[NASA-CASE-XLE-02531] c 05 N71-23080  
Restraining mechanism  
[NASA-CASE-MSC-13054] c 54 N78-17677  
Heat resistant protective hand covering  
[NASA-CASE-MSC-20261-2] c 54 N84-23113  
Heat resistant protective hand covering  
[NASA-CASE-MSC-20261-1] c 54 N84-28484  
Ballast system for maintaining constant pressure in a glove box  
[NASA-CASE-NPO-17786-1CU] c 35 N90-17104
- GLOW DISCHARGES**  
Deposition of alloy films --- on irregularly shaped metal object  
[NASA-CASE-LEW-11262-1] c 27 N74-13270  
Boron trifluoride coatings for thermoplastic materials and method of applying same in glow discharge  
[NASA-CASE-ARC-11057-1] c 27 N78-31233  
Electric discharge for treatment of trace contaminants  
[NASA-CASE-ARC-10975-1] c 33 N79-15245  
Use of glow discharge in fluidized beds  
[NASA-CASE-ARC-11245-1] c 28 N82-18401
- GLUCOSE**  
Use of the enzyme hexokinase for the reduction of inherent light levels  
[NASA-CASE-XGS-05533] c 04 N69-27487
- GLYCOLS**  
Stabilized unsaturated polyesters  
[NASA-CASE-NPO-16103-1] c 27 N85-29043
- GOLD COATINGS**  
Thin window, drifted silicon, charged particle detector  
[NASA-CASE-XLE-10529] c 14 N69-23191

- Chromium electrodes for REDOX cells  
[NASA-CASE-LEW-13653-1] c 44 N84-28205
- GONDOLAS**  
System for stabilizing torque between a balloon and gondola  
[NASA-CASE-GSC-11077-1] c 02 N73-13008
- GRADIENTS**  
Alternating gradient photodetector  
[NASA-CASE-NPO-17235-1CU] c 35 N90-21358
- GRANULAR MATERIALS**  
Soil particles separator, collector and viewer Patent  
[NASA-CASE-XNP-09770] c 15 N71-20440  
Carbon granule probe microphone for leak detection --- recovery boilers  
[NASA-CASE-NPO-16027-1] c 35 N85-21597
- GRAPHITE**  
Bonding graphite with fused silver chloride  
[NASA-CASE-XGS-00963] c 15 N69-39735  
Method of preparing graphite reinforced aluminum composite  
[NASA-CASE-MFS-21077-1] c 24 N75-28135  
Method of adhering bone to a rigid substrate using a graphite fiber reinforced bone cement  
[NASA-CASE-NPO-13764-1] c 27 N78-17215  
Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-3] c 28 N81-14103  
Mixed polyvalent-monovalent metal coating for carbon-graphite fibers  
[NASA-CASE-NPO-14987-1] c 24 N83-33950  
Multistage spent particle collector and a method for making same  
[NASA-CASE-LEW-13914-1] c 37 N85-33489  
Oxidation resistant slurry coating for carbon-based materials  
[NASA-CASE-LEW-13923-1] c 26 N85-35267  
Light weight fire resistant graphite composites  
[US-PATENT-4,598,007] c 24 N86-28131  
Light weight polymer matrix composite material  
[NASA-CASE-LEW-14734-1] c 24 N89-23623
- GRAPHITE-EPOXY COMPOSITES**  
Partial interlaminar separation system for composites  
[NASA-CASE-LAR-12065-1] c 24 N81-14000  
Method and device for detection of a substance --- determining carbon fiber release in fire situations  
[NASA-CASE-NPO-14940-1] c 33 N83-31954  
Seamless metal-clad fiber-reinforced organic matrix composite structures and process for their manufacture  
[NASA-CASE-LAR-13562-1] c 24 N87-18613  
Method for machining holes in composite materials  
[NASA-CASE-MFS-28044-1] c 31 N87-25491
- GRAPHITIZATION**  
Brominated graphite fibers and method of producing the same  
[NASA-CASE-LEW-14698-1] c 24 N88-29888  
Graphite fluoride fiber polymer composite material  
[NASA-CASE-LEW-14472-1] c 24 N89-14259  
Brominated graphitized carbon fibers  
[NASA-CASE-LEW-14698-2] c 27 N90-15262
- GRATINGS (SPECTRA)**  
Concave grating spectrometer Patent  
[NASA-CASE-XGS-01036] c 14 N70-40003  
Diffraction grating configuration for X-ray and ultraviolet focusing  
[NASA-CASE-GSC-12357-1] c 74 N80-21140  
Solar energy converter using surface plasma waves  
[NASA-CASE-LEW-13827-1] c 44 N85-21768  
A compact fast wide angle broad band spectrometer optical system  
[NASA-CASE-NPO-17562-1CU] c 74 N89-24153
- GRAVIMETERS**  
Gravimeter Patent  
[NASA-CASE-XMF-05844] c 14 N71-17587
- GRAVITATION**  
Alignment apparatus using a laser having a gravitationally sensitive cavity reflector  
[NASA-CASE-ARC-10444-1] c 16 N73-33397  
Anti-gravity device  
[NASA-CASE-MFS-22758-1] c 70 N75-26789
- GRAVITATIONAL CONSTANT**  
Gravity device Patent  
[NASA-CASE-XMF-00424] c 11 N70-38196
- GRAVITATIONAL EFFECTS**  
Locomotion and restraint aid Patent  
[NASA-CASE-ARC-10153] c 05 N71-28619  
Rotary plant growth accelerating apparatus --- weightlessness  
[NASA-CASE-ARC-10722-1] c 51 N75-25503  
Method and apparatus for simulating gravitational forces on a living organism  
[NASA-CASE-MSC-20202-1] c 54 N84-16803  
Load positioning system with gravity compensation  
[NASA-CASE-ARC-11525-1] c 37 N86-27629
- GRAVITATIONAL FIELDS**  
Difference circuit Patent  
[NASA-CASE-XNP-08274] c 10 N71-13537

- Process for preparation of large-particle-size monodisperse latexes  
[NASA-CASE-MFS-25000-1] c 25 N81-19242
- GRAVITY GRADIENT SATELLITES**  
Stabilization of gravity oriented satellites Patent  
[NASA-CASE-XAC-01591] c 31 N71-17729  
Station keeping of a gravity gradient stabilized satellite Patent  
[NASA-CASE-XLA-03132] c 31 N71-22969
- GRAVITY GRADIOMETERS**  
Gravity device Patent  
[NASA-CASE-XMF-00424] c 11 N70-38196  
Gravity gradient attitude control system Patent  
[NASA-CASE-GSC-10555-1] c 21 N71-27324
- GRAZING INCIDENCE**  
Diffraction grating configuration for X-ray and ultraviolet focusing  
[NASA-CASE-GSC-12357-1] c 74 N80-21140  
Multispectral glancing incidence X-ray telescope  
[NASA-CASE-MFS-28013-1] c 89 N86-22459
- GRAZING INCIDENCE TELESCOPES**  
Multispectral glancing incidence X-ray telescope  
[NASA-CASE-MFS-28013-1] c 89 N86-22459
- GREENHOUSES**  
Method and apparatus for bio-regenerative life support system  
[NASA-CASE-MSC-21629-1] c 54 N89-29027
- GRIDS**  
Method of making dished ion thruster grids  
[NASA-CASE-LEW-11694-1] c 20 N75-18310  
Apparatus for forming dished ion thruster grids  
[NASA-CASE-LEW-11694-2] c 37 N76-14461  
Method of constructing dished ion thruster grids to provide hole array spacing compensation  
[NASA-CASE-LEW-11876-1] c 20 N76-21276  
Solar cell grid patterns  
[NASA-CASE-NPO-13087-2] c 44 N76-31666
- GRINDING (MATERIAL REMOVAL)**  
Laser apparatus for removing material from rotating objects Patent  
[NASA-CASE-MFS-11279] c 16 N71-20400  
Method for producing dispersion strengthened alloys by converting metal to a halide, comminuting, reducing the metal halide to the metal and sintering  
[NASA-CASE-LEW-10450-1] c 15 N72-25448  
Method of forming a sharp edge on an optical device  
[NASA-CASE-GSC-12348-1] c 74 N80-24149
- GRINDING MACHINES**  
Grinding arrangement for ball nose milling cutters  
[NASA-CASE-LAR-10450-1] c 37 N74-27905
- GROOVES**  
Energy absorbing device Patent  
[NASA-CASE-XMF-10040] c 15 N71-22877  
Spiral groove seal --- for hydraulic rotating shaft  
[NASA-CASE-LEW-10326-3] c 37 N74-10474  
Spiral groove seal --- for rotating shaft  
[NASA-CASE-XLE-10326-4] c 37 N74-15125  
Monogroove heat pipe design: Insulated liquid channel with bridging wick  
[NASA-CASE-MSC-20487-1] c 34 N85-29180  
Quick connect coupling  
[NASA-CASE-MSC-21539-1] c 37 N90-27111
- GROUND EFFECT (COMMUNICATIONS)**  
Ground plane interference elimination by passive element  
[NASA-CASE-NPO-16632-1CU] c 32 N87-15390
- GROUND EFFECT MACHINES**  
Gravity stabilized flying vehicle Patent  
[NASA-CASE-MSC-12111-1] c 02 N71-11039  
Air cushion lift pad Patent  
[NASA-CASE-MFS-14685] c 31 N71-15689  
Open tube guideway for high speed air cushioned vehicles  
[NASA-CASE-LAR-10256-1] c 85 N74-34672
- GROUND HANDLING**  
Supporting and protecting device Patent  
[NASA-CASE-XMF-00580] c 11 N70-35383
- GROUND STATIONS**  
Traffic control system and method Patent  
[NASA-CASE-GSC-10087-1] c 02 N71-19287  
Method and apparatus for mapping planets  
[NASA-CASE-NPO-11001] c 07 N72-21118  
Ultra stable frequency distribution system  
[NASA-CASE-NPO-13836-1] c 32 N78-15323
- GROUND SUPPORT EQUIPMENT**  
Dynamic Doppler simulator Patent  
[NASA-CASE-XMS-05454-1] c 07 N71-12391  
Controlled release device Patent  
[NASA-CASE-XKS-03338] c 15 N71-24043  
Apparatus for measuring an aircraft's speed and height  
[NASA-CASE-LAR-12275-1] c 35 N79-18296
- GROUND-AIR-GROUND COMMUNICATION**  
Retrodirective optical system  
[NASA-CASE-XGS-04480] c 16 N69-27491

Closed loop ranging system Patent  
[NASA-CASE-XNP-01501] c 21 N70-41830

Location identification system  
[NASA-CASE-ERC-10324] c 07 N72-25173

Satellite personal communications system  
[NASA-CASE-NPO-14480-1] c 32 N80-20448

**GROUT**  
Antenna grout replacement system  
[NASA-CASE-NPO-15202-1] c 27 N83-34043

**GUARDS (SHIELDS)**  
Safety shield for vacuum/pressure chamber viewing port  
[NASA-CASE-GSC-12513-1] c 31 N81-18343

Trailer shield assembly for a welding torch  
[NASA-CASE-MFS-29260-1] c 37 N90-19602

**GUIDANCE (MOTION)**  
Gravity stabilized flying vehicle Patent  
[NASA-CASE-MSC-12111-1] c 02 N71-11039

Adjustable attitude guide device Patent  
[NASA-CASE-XLA-07911] c 15 N71-15571

Film feed camera having a detent means Patent  
[NASA-CASE-LAR-10686] c 14 N71-28935

Two component bearing Patent  
[NASA-CASE-XLA-00013] c 15 N71-29138

Cable stabilizer for open shaft cable operated elevators  
[NASA-CASE-KSC-10513] c 15 N72-25453

Thumb-actuated two-axis controller  
[NASA-CASE-ARC-11372-1] c 08 N86-27288

**GUIDANCE SENSORS**  
Light sensitive digital aspect sensor Patent  
[NASA-CASE-XGS-00359] c 14 N70-34158

Guidance and maneuver analyzer Patent  
[NASA-CASE-XNP-09572] c 14 N71-15621

Optical machine tool alignment indicator Patent  
[NASA-CASE-XAC-09489-1] c 15 N71-26673

Light sensor  
[NASA-CASE-NPO-11311] c 14 N72-25414

Sun direction detection system  
[NASA-CASE-NPO-13722-1] c 74 N77-22951

Sun sensing guidance system for high altitude aircraft  
[NASA-CASE-FRC-11052-1] c 04 N82-23231

Phase sensitive guidance sensor for wire-following vehicles  
[NASA-CASE-NPO-15341-1] c 35 N84-33769

**GUN LAUNCHERS**  
Self-obtaining, gas operated launcher  
[NASA-CASE-NPO-11013] c 11 N72-22247

**GUN PROPELLANTS**  
Nitramine propellants — gun propellant burning rate  
[NASA-CASE-NPO-14103-1] c 28 N78-31255

Hypervelocity gun — using both electric and chemical energy for projectile propulsion  
[NASA-CASE-XLE-03186-1] c 09 N79-21084

**GUNN EFFECT**  
Voltage tunable Gunn-type microwave generator Patent  
[NASA-CASE-XER-07894] c 09 N71-18721

Shielded cathode mode bulk effect devices  
[NASA-CASE-ERC-10119] c 26 N72-21701

Gunn-type solid state devices  
[NASA-CASE-XER-07895] c 26 N72-25679

Magnetically actuated tuning method for Gunn oscillators  
[NASA-CASE-NPO-12106] c 09 N73-15235

**GUNS**  
Method of peening and portable peening gun  
[NASA-CASE-MFS-23047-1] c 37 N76-18454

**GYNECOLOGY**  
Cervix-to-rectum measuring device in a radiation applicator for use in the treatment of cervical cancer  
[NASA-CASE-GSC-12081-2] c 52 N82-22875

**GYRATORS**  
Gyrator type circuit Patent  
[NASA-CASE-XAC-10608-1] c 09 N71-12517

Gyrator employing field effect transistors  
[NASA-CASE-MFS-21433] c 09 N73-20232

Integrated P-channel MOS gyrator  
[NASA-CASE-MFS-22343-1] c 33 N74-34638

Integrable power gyrator — with Z-matrix design using parallel transistors  
[NASA-CASE-MFS-22342-1] c 33 N75-30428

**GYROSCOPES**  
Externally pressurized fluid bearing Patent  
[NASA-CASE-XMF-00515] c 15 N70-34664

Air bearing Patent  
[NASA-CASE-XMF-00339] c 15 N70-39896

Spacecraft experiment pointing and attitude control system Patent  
[NASA-CASE-XLA-05464] c 21 N71-14132

Temperature compensated digital inertial sensor — circuit for maintaining inertial element of gyroscope or accelerometer at constant position  
[NASA-CASE-NPO-13044-1] c 35 N74-15094

All sky pointing attitude control system  
[NASA-CASE-ARC-10716-1] c 35 N77-20399

**GYROSCOPIC PENDULUMS**

Autonomous navigation system — gyroscopic pendulum for air navigation  
[NASA-CASE-ARC-11257-1] c 04 N81-21047

**GYROSTABILIZERS**

Passive dual spin misalignment compensators — gyro-stabilized device  
[NASA-CASE-GSC-11479-1] c 35 N74-28097

Annular momentum control device used for stabilization of space vehicles and the like  
[NASA-CASE-LAR-11051-1] c 15 N76-14158

Aircraft body-axis rotation measurement system  
[NASA-CASE-FRC-11043-1] c 06 N83-33882

**H****HAFFNIUM**

Thermal shock resistant hafnia ceramic material  
[NASA-CASE-LAR-10894-1] c 18 N73-14584

**HALIDES**

Method for producing dispersion strengthened alloys by converting metal to a halide, comminuting, reducing the metal halide to the metal and sintering  
[NASA-CASE-LEW-10450-1] c 15 N72-25448

Zinc-halide battery with molten electrolyte  
[NASA-CASE-NPO-11961-1] c 44 N76-18643

**HALL EFFECT**

Hall current measuring apparatus having a series resistor for temperature compensation Patent  
[NASA-CASE-XAC-01682] c 14 N71-23037

Brushless direct current tachometer Patent  
[NASA-CASE-MFS-20385] c 09 N71-24904

Hall effect transducer  
[NASA-CASE-LAR-10620-1] c 09 N72-25255

Redundant speed control for brushless Hall effect motor  
[NASA-CASE-MFS-20207-1] c 09 N73-32107

Hall effect magnetometer  
[NASA-CASE-LEW-11632-2] c 35 N75-13213

Magnetic field control — electromechanical torquing device  
[NASA-CASE-MFS-23828-1] c 33 N82-26569

**HALL GENERATORS**

Hall current measuring apparatus having a series resistor for temperature compensation Patent  
[NASA-CASE-XAC-01682] c 14 N71-23037

**HALOGENS**

Modified polyurethane foams for fuel-fire Patent  
[NASA-CASE-ARC-10098-1] c 06 N71-24739

**HAMMERS**

Apparatus for making diamonds  
[NASA-CASE-MFS-20696] c 15 N72-20446

**HAND (ANATOMY)**

Mechanically actuated triggered hand  
[NASA-CASE-MFS-20413] c 15 N72-21463

Therapeutic hand exerciser  
[NASA-CASE-LAR-11667-1] c 52 N76-19785

Compact artificial hand  
[NASA-CASE-NPO-13906-1] c 54 N79-24652

**HANDLES**

Releasable clamping apparatus  
[NASA-CASE-MFS-28192-1] c 37 N90-17154

**HANDLING EQUIPMENT**

Supporting and protecting device Patent  
[NASA-CASE-XMF-00580] c 11 N70-35383

Device for handling printed circuit cards Patent  
[NASA-CASE-MFS-20453] c 15 N71-29133

**HARDENING (MATERIALS)**

Method of heat treating age-hardenable alloys  
[NASA-CASE-XNP-01311] c 26 N75-29236

**HARDNESS**

Deposition of diamondlike carbon films  
[NASA-CASE-LEW-14080-1] c 31 N85-20153

**HARMONIC GENERATORS**

Wide band doubler and sine wave quadrature generator  
[NASA-CASE-NPO-11133] c 10 N72-20223

**HARNESSES**

Pressure suit tie-down mechanism Patent  
[NASA-CASE-XMS-00784] c 05 N71-12335

One hand backpack harness  
[NASA-CASE-LAR-10102-1] c 05 N72-23085

Shoulder harness and lap belt restraint system  
[NASA-CASE-ARC-10519-2] c 05 N75-25915

**HATCHES**

Emergency escape system Patent  
[NASA-CASE-MSC-12086-1] c 05 N71-12345

Hatch cover  
[NASA-CASE-MSC-21356-1] c 18 N90-19278

**HAZARDS**

Polycarbonate article with chemical resistant coating  
[NASA-CASE-MSC-21503-1] c 27 N90-16925

Hazards protection for space suits and spacecraft  
[NASA-CASE-MSC-21366-1] c 54 N90-25498

**HEAD-UP DISPLAYS**

Heads up display  
[NASA-CASE-LAR-12630-1] c 06 N84-27733

**HEART FUNCTION**

Ratemeter  
[NASA-CASE-MFS-20418] c 14 N73-24473

Ultrasonic biomedical measuring and recording apparatus — for recording motion of internal organs such as heart valves  
[NASA-CASE-ARC-10597-1] c 52 N74-20726

**HEART RATE**

Digital cardiometer system Patent  
[NASA-CASE-XMS-02398] c 05 N71-22896

Ratemeter  
[NASA-CASE-MFS-20418] c 14 N73-24473

Digital computing cardiometer  
[NASA-CASE-MFS-20284-1] c 52 N74-12778

Pulse transducer with artifact signal attenuator — heart rate sensors  
[NASA-CASE-FRC-11012-1] c 52 N80-23969

**HEAT**

Thermionic converter with current augmented by self induced magnetic field Patent  
[NASA-CASE-XLE-01903] c 22 N71-23599

**HEAT EXCHANGERS**

Electro-thermal rocket Patent  
[NASA-CASE-XLE-00267] c 28 N70-33356

Space suit heat exchanger Patent  
[NASA-CASE-XMS-09571] c 05 N71-19439

Dual solid cryogenics for spacecraft refrigeration Patent  
[NASA-CASE-GSC-10188-1] c 23 N71-24725

Shell side liquid metal boiler  
[NASA-CASE-NPO-10831] c 33 N72-20915

Helium refrigerator and method for decontaminating the refrigerator  
[NASA-CASE-NPO-10634] c 23 N72-25619

Condensate removal device for heat exchanger  
[NASA-CASE-MSC-14143-1] c 77 N75-20139

Heat exchanger system and method  
[NASA-CASE-LAR-10799-2] c 34 N76-17317

Heat transfer device  
[NASA-CASE-MFS-22938-1] c 34 N76-18374

Heat exchanger  
[NASA-CASE-MFS-22991-1] c 34 N77-10463

Flat-plate heat pipe  
[NASA-CASE-GSC-11998-1] c 34 N77-32413

Combustor — low nitrogen oxide formation  
[NASA-CASE-NPO-13958-1] c 25 N79-11151

Fuel delivery system including heat exchanger means  
[NASA-CASE-LEW-12793-1] c 37 N79-11403

Heat exchanger — rocket combustion chambers and cooling systems  
[NASA-CASE-LEW-12252-1] c 34 N79-13288

Heat exchanger and method of making — bonding rocket chambers with a porous metal matrix  
[NASA-CASE-LEW-12441-1] c 34 N79-13289

Thermal energy transformer  
[NASA-CASE-NPO-14058-1] c 44 N79-18443

Portable breathing system — a breathing apparatus using a rebreathing system of heat exchangers for carbon dioxide removal  
[NASA-CASE-MSC-16182-1] c 54 N80-10799

Heat exchanger and method of making — rocket lining  
[NASA-CASE-LEW-12441-2] c 34 N80-24573

Heat exchanger and method of making  
[NASA-CASE-LEW-12441-3] c 44 N81-24519

Cycling Joule Thomson refrigerator  
[NASA-CASE-NPO-15251-1] c 31 N83-31897

Reciprocating magnetic refrigerator employing tandem porous matrices within a reciprocating displacer  
[NASA-CASE-NPO-16257-1] c 31 N85-29082

Heat exchanger for electrothermal devices  
[NASA-CASE-LEW-14037-1] c 20 N87-16875

Monogroove cold plate  
[NASA-CASE-MSC-20946-1] c 34 N87-28867

High effectiveness contour matching contact heat exchanger  
[NASA-CASE-MSC-20840-1] c 34 N88-29132

Capillary heat transport and fluid management device  
[NASA-CASE-MFS-28217-1] c 34 N89-14392

Pressurized bellows flat contact heat exchanger interface  
[NASA-CASE-MSC-21271-1] c 34 N90-21999

Heat exchanger with oscillating flow  
[NASA-CASE-LAR-14033-1] c 34 N90-27072

**HEAT FLUX**

Heat flux sensor assembly  
[NASA-CASE-XMS-05909-1] c 14 N69-27459

Heat flux measuring system Patent  
[NASA-CASE-XFR-03802] c 33 N71-23085

Radial heat flux transformer  
[NASA-CASE-NPO-10828] c 33 N72-17948

Heat exchanger with oscillating flow  
[NASA-CASE-LAR-14033-1] c 34 N90-27072

## HEAT MEASUREMENT

Thermal detector of electromagnetic energy by means of a vibrating electrode Patent  
[NASA-CASE-XAC-10768] c 09 N71-18830  
Specific wavelength colorimeter — for measuring given solute concentration in test sample  
[NASA-CASE-MSC-14081-1] c 35 N74-27860  
Method and device for determining heats of combustion of gaseous hydrocarbons  
[NASA-CASE-LAR-13528-1] c 25 N88-29002

## HEAT OF COMBUSTION

Method and device for determining heats of combustion of gaseous hydrocarbons  
[NASA-CASE-LAR-13528-1] c 25 N88-29002

## HEAT OF VAPORIZATION

Pumped two-phase heat transfer loop  
[NASA-CASE-MSC-20841-1] c 34 N87-22950

## HEAT PIPES

Heat pipe thermionic diode power system Patent  
[NASA-CASE-XMF-05843] c 03 N71-11055  
Microwave power receiving antenna Patent  
[NASA-CASE-MFS-20333] c 09 N71-13486  
Isothermal cover with thermal reservoirs Patent  
[NASA-CASE-MFS-20355] c 33 N71-25353  
Structural heat pipe — for spacecraft wall thermal insulation system  
[NASA-CASE-GSC-11619-1] c 34 N75-12222  
Method of forming a wick for a heat pipe  
[NASA-CASE-NPO-13391-1] c 34 N76-27515  
Production of I-123  
[NASA-CASE-LEW-11390-3] c 25 N76-29379  
Heat pipe with dual working fluids  
[NASA-CASE-ARC-10198] c 34 N78-17336  
Multi-chamber controllable heat pipe  
[NASA-CASE-ARC-10199] c 34 N78-17337  
Thermal control canister  
[NASA-CASE-GSC-12253-1] c 34 N79-31523  
High thermal power density heat transfer — thermionic converters  
[NASA-CASE-LEW-12950-1] c 34 N82-11399  
Heat pipes containing alkali metal working fluid  
[NASA-CASE-LEW-12253-1] c 74 N83-19596  
Heat pipe thermal switch  
[NASA-CASE-GSC-12812-1] c 34 N83-35307  
Thermal control system — removing waste heat from industrial process spacecraft  
[NASA-CASE-GSC-12771-1] c 34 N84-14461  
Heat pipe cooled probe  
[NASA-CASE-LAR-12588-1] c 34 N85-21568  
High thermal power density heat transfer apparatus providing electrical isolation at high temperature using heat pipes  
[NASA-CASE-LEW-12950-2] c 34 N85-29179  
Multi-leg heat pipe evaporator  
[NASA-CASE-MSC-20812-1] c 34 N86-27583  
Monogroove cold plate  
[NASA-CASE-MSC-20946-1] c 34 N87-28867  
Space vehicle thermal rejection system  
[NASA-CASE-LAR-13738-1] c 18 N87-29586  
Polymeric heat pipe wick  
[NASA-CASE-GSC-13019-1] c 34 N88-29133  
Reusable high-temperature heat pipes and heat pipe panels  
[NASA-CASE-LAR-13761-1] c 34 N90-20323  
Ceramic heat pipe wick  
[NASA-CASE-GSC-13199-1] c 27 N90-23541

## HEAT PUMPS

Thermal pump-compressor for space use Patent  
[NASA-CASE-XLA-00377] c 33 N71-17610  
Manually actuated heat pump  
[NASA-CASE-NPO-10677] c 05 N72-11084  
Pump for delivering heated fluids  
[NASA-CASE-NPO-11417] c 15 N73-24513  
Magnetic heat pumping  
[NASA-CASE-LEW-12508-1] c 34 N78-17335  
Cooling system for high speed aircraft  
[NASA-CASE-LAR-12406-1] c 05 N81-26114  
Magnetic heat pumping  
[NASA-CASE-LEW-12508-3] c 34 N83-29625  
Ceramic heat pipe wick  
[NASA-CASE-GSC-13199-1] c 27 N90-23541  
Convergent strand array liquid pumping system  
[NASA-CASE-NPO-17301-1-CU] c 31 N90-23587

## HEAT RADIATORS

Capillary radiator Patent  
[NASA-CASE-XLE-03307] c 33 N71-14035  
Radiator deployment actuator Patent  
[NASA-CASE-MSC-11817-1] c 15 N71-26611  
Space simulation and radiative property testing system and method Patent  
[NASA-CASE-MFS-20096] c 14 N71-30026  
Space vehicle thermal rejection system  
[NASA-CASE-LAR-13738-1] c 18 N87-29586  
Arc-textured high emittance radiator surfaces  
[NASA-CASE-LEW-14679-1] c 27 N89-28651

## HEAT RESISTANT ALLOYS

High temperature nickel-base alloy Patent  
[NASA-CASE-XLE-00151] c 17 N70-33283  
Nickel-base alloy Patent  
[NASA-CASE-XLE-00283] c 17 N70-36616  
High temperature cobalt-base alloy Patent  
[NASA-CASE-XLE-02991] c 17 N71-16025  
Brazing alloy Patent  
[NASA-CASE-XNP-03063] c 17 N71-23365  
Method of forming superalloys  
[NASA-CASE-LEW-10805-1] c 15 N73-13465  
Method of making pressure tight seal for super alloy  
[NASA-CASE-LAR-10170-1] c 37 N74-11301  
Method of forming articles of manufacture from superalloy powders  
[NASA-CASE-LEW-10805-2] c 37 N74-13179  
Refractory porcelain enamel passive control coating for high temperature alloys  
[NASA-CASE-MFS-22324-1] c 27 N75-27160  
Cermets composition and method of fabrication — heat resistant alloys and powders  
[NASA-CASE-NPO-13120-1] c 27 N76-15311  
Metallic hot wire anemometer — for high speed wind tunnel tests  
[NASA-CASE-ARC-10911-1] c 35 N77-20400  
Method of growing composites of the type exhibiting the Soret effect — improved structure of eutectic alloy crystals  
[NASA-CASE-MFS-22926-1] c 24 N77-27187  
Directionally solidified eutectic gamma plus beta nickel-base superalloys  
[NASA-CASE-LEW-12906-1] c 26 N77-32279  
Nickel base alloy — for gas turbine engine stator vanes  
[NASA-CASE-LEW-12270-1] c 26 N77-32280  
Directionally solidified eutectic gamma-gamma nickel-base superalloys  
[NASA-CASE-LEW-12905-1] c 26 N78-18183  
Coating with overlay metallic-cermet alloy systems  
[NASA-CASE-LEW-13639-2] c 26 N84-27855  
Heat treatment for superalloy  
[NASA-CASE-LEW-14262-1] c 26 N87-28647  
Elevated temperature aluminum alloys  
[NASA-CASE-LAR-13632-1] c 26 N87-29650  
Directional solidification of superalloys  
[NASA-CASE-MFS-28314-1] c 26 N90-15227

## HEAT SHIELDING

Heat flux sensor assembly  
[NASA-CASE-XMS-05909-1] c 14 N69-27459  
Heat shield oven  
[NASA-CASE-XMS-04318] c 15 N69-27871  
Heat shield Patent  
[NASA-CASE-XMS-00486] c 33 N70-33344  
Sandwich panel construction Patent  
[NASA-CASE-XLA-00349] c 33 N70-37979  
Hypersonic reentry vehicle Patent  
[NASA-CASE-XMS-04142] c 31 N70-41631  
Transpirationally cooled heat ablation system Patent  
[NASA-CASE-XMS-02677] c 31 N70-42075  
Azine polymers and process for preparing the same Patent  
[NASA-CASE-XMF-08656] c 06 N71-11242  
Synthesis of polymeric Schiff bases by reaction of acetals and amine compounds Patent  
[NASA-CASE-XMF-08652] c 06 N71-11243  
Lightweight refractory insulation and method of preparing the same Patent  
[NASA-CASE-XMF-05279] c 18 N71-16124  
Thermal radiation shielding Patent  
[NASA-CASE-XLE-03432] c 33 N71-24145  
Spacecraft Patent  
[NASA-CASE-MSC-13047-1] c 31 N71-25434  
Fabric for micrometeoroid protection garment Patent  
[NASA-CASE-MSC-12109] c 18 N71-26285  
Thermal insulation attaching means — adhesive bonding of felt vibration insulators under ceramic tiles  
[NASA-CASE-MSC-12619-2] c 27 N79-12221  
Thermal insulation protection means  
[NASA-CASE-MSC-12737-1] c 24 N79-25142  
Installing fiber insulation  
[NASA-CASE-MSC-16973-1] c 37 N81-14317  
Thermal barrier pressure seal — shielding junctions between spacecraft control surfaces and structures  
[NASA-CASE-MSC-18134-1] c 37 N81-15363  
Multiwall thermal protection system  
[NASA-CASE-LAR-12620-1] c 24 N82-32417  
High temperature silicon carbide impregnated insulating fabrics  
[NASA-CASE-MSC-18832-1] c 27 N83-18908  
Mechanical fastener  
[NASA-CASE-LAR-12738-2] c 37 N85-30335

## HEAT SINKS

Thermal conductive connection and method of making same Patent  
[NASA-CASE-XMS-02087] c 09 N70-41717

Constant temperature heat sink for calorimeters Patent  
[NASA-CASE-XMF-04208] c 33 N71-29051  
Tubular sublimatory evaporator heat sink  
[NASA-CASE-ARC-10912-1] c 34 N77-19353  
Compact pulsed laser having improved heat conductance  
[NASA-CASE-NPO-13147-1] c 36 N77-25502  
Hypersonic airbreathing missile  
[NASA-CASE-LAR-12264-1] c 15 N78-32168  
Electroexplosive device  
[NASA-CASE-NPO-13858-1] c 28 N79-11231  
Thermal control canister  
[NASA-CASE-GSC-12253-1] c 34 N79-31523  
Heat pipe thermal switch  
[NASA-CASE-GSC-12812-1] c 34 N83-35307  
Self-actuating heat switches for redundant refrigeration systems  
[NASA-CASE-NPO-17085-1-CU] c 31 N89-12785

## HEAT SOURCES

Conically shaped cavity radiometer with a dual purpose cone winding Patent  
[NASA-CASE-XNP-09701] c 14 N71-26475  
Thermally cascaded thermoelectric generator  
[NASA-CASE-NPO-10753] c 03 N72-26031  
Protected isotope heat source — for atmospheric reentry protection and heat transmission to spacecraft  
[NASA-CASE-LEW-11227-1] c 73 N75-30876  
Portable electrophoresis apparatus using minimum electrolyte  
[NASA-CASE-NPO-13274-1] c 25 N79-10163  
Low gravity exothermic heating/cooling apparatus  
[NASA-CASE-MSC-25707-1] c 35 N85-29214  
High temperature electric arc furnace and method  
[NASA-CASE-MFS-28281-1] c 09 N90-23415

## HEAT STORAGE

Solar energy trap  
[NASA-CASE-MFS-22744-1] c 44 N76-24696  
Thermal energy storage system — operating on superheating of liquids  
[NASA-CASE-MFS-23167-1] c 44 N76-31667  
Saltless solar pond  
[NASA-CASE-NPO-15808-1] c 44 N84-34792  
Stable density stratification solar pond  
[NASA-CASE-NPO-15419-2] c 44 N85-30474

## HEAT TRANSFER

Thermal switch Patent  
[NASA-CASE-XNP-00463] c 33 N70-36847  
Sandwich panel construction Patent  
[NASA-CASE-XLA-00349] c 33 N70-37979  
Apparatus for transferring cryogenic liquids Patent  
[NASA-CASE-XLE-00345] c 15 N70-38020  
Method of improving heat transfer characteristics in a nucleate boiling process Patent  
[NASA-CASE-XMS-04268] c 33 N71-16277  
Transmission line thermal short Patent  
[NASA-CASE-XNP-09775] c 09 N71-20445  
Heat sensing instrument Patent  
[NASA-CASE-XLA-01551] c 14 N71-22989  
Fluid phase analyzer Patent  
[NASA-CASE-NPO-10691] c 14 N71-26199  
Heat conductive resiliently compressible structure for space electronics package modules Patent  
[NASA-CASE-MSC-12389] c 33 N71-29052  
Space simulation and radiative property testing system and method Patent  
[NASA-CASE-MFS-20096] c 14 N71-30026  
Manually actuated heat pump  
[NASA-CASE-NPO-10677] c 05 N72-11084  
High intensity radiant energy pulse source having means for opening shutter when light flux has reached a desired level  
[NASA-CASE-ARC-10178-1] c 09 N72-17152  
Apparatus for sensing temperature  
[NASA-CASE-XLE-05230] c 14 N72-27410  
Thermal control system for a spacecraft modular housing  
[NASA-CASE-GSC-11018-1] c 31 N73-30829  
Thermal flux transfer system  
[NASA-CASE-NPO-12070-1] c 28 N73-32606  
Electrostatically controlled heat shutter  
[NASA-CASE-NPO-11942-1] c 33 N73-32818  
Heat transfer device  
[NASA-CASE-NPO-11120-1] c 34 N74-18552  
Heat exchanger  
[NASA-CASE-MFS-22991-1] c 34 N77-10463  
Heat pipe with dual working fluids  
[NASA-CASE-ARC-10198] c 34 N78-17336  
Low cost cryostat  
[NASA-CASE-NPO-14513-1] c 35 N81-14287  
Heat exchanger and method of making  
[NASA-CASE-LEW-12441-3] c 44 N81-24519  
Thermochemical generation of hydrogen  
[NASA-CASE-NPO-15015-1] c 25 N82-28368  
Heat pipes containing alkali metal working fluid  
[NASA-CASE-LEW-12253-1] c 74 N83-19596

- Automatic thermal switch — spacecraft applications  
[NASA-CASE-GSC-12553-1] c 34 N83-28356
- Heat pipe thermal switch  
[NASA-CASE-GSC-12812-1] c 34 N83-35307
- Tip cap for a rotor blade  
[NASA-CASE-LEW-13654-1] c 07 N84-22560
- Heat pipes to reduce engine exhaust emissions  
[NASA-CASE-LEW-12590-1] c 37 N84-22958
- High thermal power density heat transfer apparatus providing electrical isolation at high temperature using heat pipes  
[NASA-CASE-LEW-12950-2] c 34 N85-29179
- Monogroove heat pipe design: Insulated liquid channel with bridging wick  
[NASA-CASE-MSC-20497-1] c 34 N85-29180
- Pumped two-phase heat transfer loop  
[NASA-CASE-MSC-20841-1] c 34 N87-22950
- Pumped two-phase heat transfer loop  
[NASA-CASE-MSC-20841-2] c 34 N88-23958
- Method and apparatus for growing crystals  
[NASA-CASE-MFS-28137-1] c 78 N88-24544
- Pressurized bellows flat contact heat exchanger interface  
[NASA-CASE-MSC-21271-1] c 34 N90-21999
- Hydrodynamic skin-friction reduction  
[NASA-CASE-LAR-14078-1-CU] c 34 N90-27071
- Heat exchanger with oscillating flow  
[NASA-CASE-LAR-14033-1] c 34 N90-27072
- HEAT TRANSMISSION**
- Heat flow calorimeter — measures output of Ni-Cd batteries  
[NASA-CASE-GSC-11434-1] c 34 N74-27859
- Protected isotope heat source — for atmospheric reentry protection and heat transmission to spacecraft  
[NASA-CASE-LEW-11227-1] c 73 N75-30876
- Heat transparent high intensity high efficiency solar cell  
[NASA-CASE-LEW-12692-1] c 44 N83-14692
- HEAT TREATMENT**
- High-speed infrared furnace  
[NASA-CASE-XLE-10466] c 17 N69-25147
- Heat shield oven  
[NASA-CASE-XMS-04318] c 15 N69-27871
- Method for molding compounds Patent  
[NASA-CASE-XLA-01091] c 15 N71-10672
- Method of producing refractory bodies having controlled porosity Patent  
[NASA-CASE-LEW-10393-1] c 17 N71-15468
- Inorganic thermal control pigment Patent  
[NASA-CASE-XNP-02139] c 18 N71-24184
- Thermal compression bonding of interconnectors  
[NASA-CASE-GSC-10303] c 15 N72-22487
- Method of heat treating a formed powder product material  
[NASA-CASE-LEW-10805-3] c 26 N74-10521
- Diffusion welding — heat treatment of nickel alloys following single step vacuum welding process  
[NASA-CASE-LEW-11388-2] c 37 N74-21055
- Heat sterilizable patient ventilator  
[NASA-CASE-NPO-13313-1] c 54 N75-27761
- Method of heat treating age-hardenable alloys  
[NASA-CASE-XNP-01311] c 26 N75-29236
- Method for detecting pollutants — through chemical reactions and heat treatment  
[NASA-CASE-LAR-11405-1] c 45 N76-31714
- Method of producing complex aluminum alloy parts of high temper. and products thereof  
[NASA-CASE-MSC-19693-1] c 26 N78-24333
- Bakeable McLeod gauge  
[NASA-CASE-XGS-01293-1] c 35 N79-33450
- Heat treat fixture and method of heat treating  
[NASA-CASE-LAR-11821-1] c 26 N80-28492
- Active hold-down for heat treating  
[NASA-CASE-NPO-16892-1-CU] c 37 N87-14704
- Heat treatment for superalloy  
[NASA-CASE-LEW-14262-1] c 26 N87-28647
- Method of preparing fiber reinforced ceramic material  
[NASA-CASE-LEW-14392-1] c 27 N87-28656
- Cellular thermosetting fluoropolymers and process for making them  
[NASA-CASE-GSC-13008-1] c 27 N88-23894
- Solidification processing of alloys using an applied electric field  
[NASA-CASE-MFS-26083-1-CU] c 26 N90-26940
- HEATERS**
- Inherent redundancy electric heater  
[NASA-CASE-MFS-21462-1] c 33 N74-14935
- HEATING**
- System for preconditioning a combustible vapor  
[NASA-CASE-NPO-12072] c 28 N72-22772
- Diffusion welding in air — solid state welding of butt joint by fusion welding, surface cleaning, and heating  
[NASA-CASE-LEW-11387-1] c 37 N74-18128
- Heating and cooling system — for fatigue test specimens  
[NASA-CASE-LAR-12393-1] c 34 N83-34221
- Low gravity exothermic heating/cooling apparatus  
[NASA-CASE-MSC-25707-1] c 35 N85-29214
- Method for improving the fuel efficiency of a gas turbine engine  
[NASA-CASE-LEW-13142-2] c 07 N86-20389
- Thermocouple for heating and cooling of memory metal actuators  
[NASA-CASE-NPO-17068-1-CU] c 35 N88-29151
- Furnace for tensile/fatigue testing  
[NASA-CASE-LEW-14848-1] c 14 N89-28549
- Boron-containing organosilane polymers and ceramic materials thereof  
[NASA-CASE-ARC-11649-2-SB] c 27 N90-21177
- Acoustic convective system  
[NASA-CASE-NPO-17278-1-CU] c 31 N90-21215
- Convergent strand array liquid pumping system  
[NASA-CASE-NPO-17301-1-CU] c 31 N90-23587
- HEATING EQUIPMENT**
- Method and apparatus for controllably heating fluid Patent  
[NASA-CASE-XMF-04237] c 33 N71-16278
- Electric arc apparatus Patent  
[NASA-CASE-XAC-01677] c 09 N71-20816
- Radial heat flux transformer  
[NASA-CASE-NPO-10828] c 33 N72-17948
- Self-cycling fluid heater  
[NASA-CASE-MSC-15567-1] c 33 N73-16918
- Portable heatable container  
[NASA-CASE-NPO-14237-1] c 44 N80-20808
- Glass heating panels and method for preparing the same from architectural reflective glass  
[NASA-CASE-NPO-15753-1] c 27 N84-33589
- Precision manipulator heating and cooling apparatus for use in UHV systems with sample transfer capability  
[NASA-CASE-LAR-13040-1] c 37 N85-29286
- Active control of boundary layer transition and turbulence  
[NASA-CASE-LAR-13532-1] c 34 N86-26575
- Spacecraft component heater control system  
[NASA-CASE-MFS-28327-1] c 18 N89-28556
- HEIGHT**
- Sidelooking laser altimeter for a flight simulator  
[NASA-CASE-ARC-11312-1] c 36 N83-34304
- HELICAL ANTENNAS**
- Weatherproof helix antenna Patent  
[NASA-CASE-XKS-08485] c 07 N71-19493
- Collapsible high gain antenna  
[NASA-CASE-KSC-10392] c 07 N73-26117
- HELICOPTER CONTROL**
- Helicopter anti-torque system using fuselage strakes  
[NASA-CASE-LAR-13630-1] c 08 N88-23809
- HELICOPTER DESIGN**
- Helicopter anti-torque system using fuselage strakes  
[NASA-CASE-LAR-13630-1] c 08 N88-23809
- HELICOPTER WAKES**
- Variable geometry rotor system  
[NASA-CASE-LAR-10557] c 02 N72-11018
- HELICOPTERS**
- Hingeless helicopter rotor with improved stability  
[NASA-CASE-ARC-10807-1] c 05 N77-17029
- Non-destructive method for applying and removing instrumentation on helicopter rotor blades  
[NASA-CASE-LAR-11201-1] c 35 N78-24515
- Constant lift rotor for a heavier than air craft  
[NASA-CASE-ARC-11045-1] c 05 N79-17847
- Shapes for rotating airfoils  
[NASA-CASE-LAR-12396-1] c 02 N84-28732
- Helicopter anti-torque system using strakes  
[NASA-CASE-LAR-13233-1] c 05 N84-33400
- Swashplate control system  
[NASA-CASE-ARC-11633-1] c 08 N87-23631
- High lift, low pitching moment airfoils  
[NASA-CASE-LAR-13215-1] c 02 N89-14224
- HELIOSTATS**
- Solar tracking system  
[NASA-CASE-MFS-23999-1] c 44 N81-24520
- HELIUM**
- Helium refining by superfluidity Patent  
[NASA-CASE-XNP-00733] c 06 N70-34946
- High pressure helium purifier Patent  
[NASA-CASE-XMF-06888] c 15 N71-24044
- Method and apparatus for generating coherent radiation in the ultra-violet region and above by use of distributed feedback  
[NASA-CASE-NPO-13346-1] c 36 N76-29575
- Cryostat system for temperatures on the order of 2 deg K or less  
[NASA-CASE-NPO-13459-1] c 31 N77-10229
- Thermal compensator for closed-cycle helium refrigerator — assuring constant temperature for an infrared laser diode  
[NASA-CASE-GSC-12168-1] c 31 N79-17029
- Reciprocating magnetic refrigerator employing tandem porous matrices within a reciprocating displacer  
[NASA-CASE-NPO-16257-1] c 31 N85-29082
- HELIUM HYDROGEN ATMOSPHERES**
- Method and means for helium/hydrogen ratio measurement by alpha scattering  
[NASA-CASE-NPO-14079-1] c 25 N80-20334
- HELIUM IONS**
- Charge transfer reaction laser with preionization means  
[NASA-CASE-NPO-13945-1] c 36 N78-27402
- HELIUM-NEON LASERS**
- Laser communication system for controlling several functions at a location remote to the laser  
[NASA-CASE-LAR-10311-1] c 16 N73-16536
- Direction sensitive laser velocimeter — determining the direction of particles using a helium-neon laser  
[NASA-CASE-LAR-12177-1] c 36 N81-24422
- HELMETS**
- Helmet assembly and latch means therefor Patent  
[NASA-CASE-XMS-04935] c 05 N71-11190
- Electrode construction Patent  
[NASA-CASE-ARC-10043-1] c 05 N71-11193
- Venting device for pressurized space suit helmet Patent  
[NASA-CASE-XMS-09652-1] c 05 N71-26333
- Helmet latching and attaching ring  
[NASA-CASE-XMS-04670] c 54 N78-17678
- Protective garment ventilation system  
[NASA-CASE-XMS-04928] c 54 N78-17679
- Helmet feedport  
[NASA-CASE-XMS-09653] c 54 N78-17680
- Emergency space-suit helmet  
[NASA-CASE-MSC-10954-1] c 54 N78-18761
- Helmet weight simulator  
[NASA-CASE-LAR-12320-1] c 54 N81-27806
- Polycarbonate article with chemical resistant coating  
[NASA-CASE-MSC-21503-1] c 27 N90-16925
- HELMHOLTZ RESONATORS**
- Acoustic ground impedance meter  
[NASA-CASE-LAR-12995-1] c 35 N84-22933
- HEMISPHERICAL SHELLS**
- Anti-glare improvement for optical imaging systems Patent  
[NASA-CASE-NPO-10337] c 14 N71-15604
- HERMETIC SEALS**
- Line cutter Patent  
[NASA-CASE-XMS-04072] c 15 N70-42017
- Hermetically sealed explosive release mechanism Patent  
[NASA-CASE-XGS-00824] c 15 N71-16078
- Traveling sealer for contoured table Patent  
[NASA-CASE-XLA-01494] c 15 N71-24164
- Method for detecting leaks in hermetically sealed containers Patent  
[NASA-CASE-ERC-10045] c 15 N71-24910
- Hermetic sealed vibration damper Patent  
[NASA-CASE-MSC-10959] c 15 N71-26243
- Method of forming ceramic to metal seal Patent  
[NASA-CASE-XNP-01263-2] c 15 N71-26312
- Pressure seal Patent  
[NASA-CASE-NPO-10796] c 15 N71-27068
- Tube sealing device Patent  
[NASA-CASE-NPO-10431] c 15 N71-29132
- Hermetically sealed elbow actuator  
[NASA-CASE-MFS-14710] c 09 N72-22195
- Heat transfer device  
[NASA-CASE-NPO-11120-1] c 34 N74-18552
- Device for tensioning test specimens within an hermetically sealed chamber  
[NASA-CASE-MFS-23281-1] c 35 N77-22450
- Cooling system for removing metabolic heat from an hermetically sealed spacesuit  
[NASA-CASE-ARC-11059-1] c 54 N78-32721
- Hermetic seal for a shaft  
[NASA-CASE-NPO-15115-1] c 37 N82-24493
- Method for forming hermetic seals  
[NASA-CASE-NPO-16423-1-CU] c 37 N87-21334
- Hermetically sealable package for hybrid solid-state electronic devices and the like  
[NASA-CASE-MSC-20181-1] c 33 N88-23941
- HEXAGONS**
- Hexagon solar power panel  
[NASA-CASE-NPO-12148-1] c 44 N78-27515
- HEXAMETHYLENETETRAMINE**
- Structural wood panels with improved fire resistance  
[NASA-CASE-ARC-11174-1] c 24 N81-13999
- HEXOKINASE**
- Use of the enzyme hexokinase for the reduction of inherent light levels  
[NASA-CASE-XGS-05533] c 04 N69-27487
- HIERARCHIES**
- Fault tolerant hypercube computer system architecture  
[NASA-CASE-NPO-16859-1-CU] c 60 N90-21527
- HIGH ACCELERATION**
- Universal pilot restraint suit and body support therefor Patent  
[NASA-CASE-XAC-00405] c 05 N70-41819



High acceleration cable deployment system  
[NASA-CASE-ARC-11256-1] c 15 N82-24272

**HIGH ALTITUDE**

Balanced bellows spirometer  
[NASA-CASE-XAR-01547] c 05 N69-21473

Sun sensing guidance system for high altitude aircraft  
[NASA-CASE-FRC-11052-1] c 04 N82-23231

**HIGH ALTITUDE BALLOONS**

Thin film strain transducer  
[NASA-CASE-WLP-10055-1] c 35 N84-28015

Thin film strain transducer --- suitable for in-flight measurement of scientific balloon strain  
[NASA-CASE-WLP-10055-2] c 35 N85-21598

**HIGH ALTITUDE ENVIRONMENTS**

Method of making a solid propellant rocket motor Patent  
[NASA-CASE-XLA-04126] c 28 N71-26779

**HIGH ASPECT RATIO**

Landing arrangement for aerial vehicles Patent  
[NASA-CASE-XLA-00142] c 02 N70-33286

Landing arrangement for aerial vehicle Patent  
[NASA-CASE-XLA-00806] c 02 N70-34858

Means for controlling aerodynamically induced twist  
[NASA-CASE-LAR-12175-1] c 05 N82-28279

**HIGH FREQUENCIES**

Apparatus for ballasting high frequency transistors  
[NASA-CASE-XGS-05003] c 09 N69-24318

Holder for crystal resonators Patent  
[NASA-CASE-XNP-03637] c 15 N71-21311

Multiple varactor frequency doubler Patent  
[NASA-CASE-XMF-04958-1] c 10 N71-26414

Filtering technique based on high-frequency plant modeling for high-gain control  
[NASA-CASE-LAR-12215-1] c 08 N79-23097

Method of and apparatus for double-exposure holographic interferometry  
[NASA-CASE-MFS-25405-1] c 35 N84-22929

JFET reflection oscillator  
[NASA-CASE-GSC-12555-1] c 33 N86-19515

Improved high power/high frequency inductor  
[NASA-CASE-NPO-17830-1-CU] c 33 N90-27042

**HIGH GAIN**

Filtering technique based on high-frequency plant modeling for high-gain control  
[NASA-CASE-LAR-12215-1] c 08 N79-23097

**HIGH PASS FILTERS**

Radio frequency coaxial high pass filter Patent  
[NASA-CASE-XGS-01418] c 09 N71-23573

**HIGH POLYMERS**

Variable stiffness polymeric damper  
[NASA-CASE-XAC-11225] c 14 N69-27486

**HIGH POWER LASERS**

Large volume multiple-path nuclear pumped laser  
[NASA-CASE-LAR-12592-1] c 36 N82-13415

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[NASA-CASE-NPO-13568-1] c 32 N76-21365  
Reflex feed system for dual frequency antenna with frequency cutoff means  
[NASA-CASE-NPO-14022-1] c 32 N78-31321  
Dual band combiner for horn antenna  
[NASA-CASE-NPO-14519-1] c 32 N80-23524  
Collapsible corrugated horn antenna  
[NASA-CASE-LAR-11745-1] c 32 N80-29539  
Multifrequency broadband polarized horn antenna  
[NASA-CASE-NPO-14588-1] c 32 N81-25278

**HOSES**

Self-contained, single-use hose and tubing cleaning module  
[NASA-CASE-MSC-20857-1] c 37 N87-17035

**HOT CATHODES**

Ion thruster cathode  
[NASA-CASE-XLE-07087] c 06 N69-39889

**HOT CORROSION**

Castable hot corrosion resistant alloy  
[NASA-CASE-LEW-14134-2] c 26 N89-14303

**HOT ISOSTATIC PRESSING**

Improved process for HIP canning of composites  
[NASA-CASE-LEW-14990-1-CU] c 24 N90-15147  
One step HIP canning of powder metallurgy composites  
[NASA-CASE-LEW-14719-1] c 24 N90-23493

**HOT PRESSING**

Method of making a cermet Patent  
[NASA-CASE-LEW-10219-1] c 18 N71-28729  
Holding fixture for a hot stamping press  
[NASA-CASE-GSC-12619-1] c 37 N84-12491

**HOT WORKING**

Method for forming plastic materials Patent  
[NASA-CASE-XMS-05516] c 15 N71-17803

**HOT-FILM ANEMOMETERS**

Crossflow vorticity sensor  
[NASA-CASE-LAR-13436-1-CU] c 02 N88-23759

Method of forming a multiple layer dielectric and a hot film sensor therewith  
[NASA-CASE-LAR-13678-1] c 76 N90-24168

**HOT-WIRE ANEMOMETERS**

Metallic hot wire anemometer — for high speed wind tunnel tests  
[NASA-CASE-ARC-10911-1] c 35 N77-20400  
Method for making a hot wire anemometer and product thereof  
[NASA-CASE-ARC-10900-1] c 35 N77-24454

**HOT-WIRE FLOWMETERS**

Hot wire liquid level detector for cryogenic fluids Patent  
[NASA-CASE-XLE-00454] c 23 N71-17802  
Flow separation detector  
[NASA-CASE-ARC-11046-1] c 35 N78-14364  
Hot foil transducer skin friction sensor  
[NASA-CASE-LAR-12321-1] c 35 N82-24470

**HOUSINGS**

Sealed cabinetry Patent  
[NASA-CASE-MSC-12168-1] c 09 N71-18600  
Open type urine receptacle  
[NASA-CASE-MSC-12324-1] c 05 N72-22093  
Universal environment package with sectional component housing  
[NASA-CASE-MSC-10031] c 15 N72-22486  
Gas flow control device  
[NASA-CASE-NPO-11479] c 15 N73-13462  
Cryogenic gyroscope housing — with annular disks for gas spin-up  
[NASA-CASE-MFS-21138-1] c 35 N74-18323  
Heat transfer device  
[NASA-CASE-NPO-11120-1] c 34 N74-18552  
Deformable bearing seat  
[NASA-CASE-LEW-12527-1] c 37 N77-32500  
Preloadable vector sensitive latch  
[NASA-CASE-MSC-20910-1] c 37 N87-25582

**HOVERING**

Gravity stabilized flying vehicle Patent  
[NASA-CASE-MSC-12111-1] c 02 N71-11039

**HUBBLE SPACE TELESCOPE**

System for the measurement of ultra-low stray light levels — determining the adequacy of large space telescope systems  
[NASA-CASE-MFS-23513-1] c 74 N79-11865  
Orbital maneuvering end effectors  
[NASA-CASE-MFS-28161-1] c 37 N87-18817

**HUBS**

Self-locking mechanical center joint  
[NASA-CASE-LAR-12884-1] c 37 N85-30336

**HUGONIOT EQUATION OF STATE**

Determining particle density using known material Hugoniot curves  
[NASA-CASE-LAR-11059-1] c 76 N75-12810

**HULLS (STRUCTURES)**

Hydrofoil Patent  
[NASA-CASE-XLA-00229] c 12 N70-33305

**HUMAN BEINGS**

Skeletal stressing method and apparatus Patent  
[NASA-CASE-ARC-10100-1] c 05 N71-24738  
Emergency escape system Patent  
[NASA-CASE-XKS-07814] c 15 N71-27067

**HUMAN BODY**

Mass measuring system Patent  
[NASA-CASE-XMS-03371] c 05 N70-42000  
Biomedical electrode arrangement Patent  
[NASA-CASE-XFR-10856] c 05 N71-11189  
Garments for controlling the temperature of the body Patent  
[NASA-CASE-XMS-10269] c 05 N71-24147  
Tilting table for ergometer and for other biomedical devices  
[NASA-CASE-MFS-21010-1] c 05 N73-30078  
Method and system for in vivo measurement of bone tissue using a two level energy source  
[NASA-CASE-MSC-14276-1] c 52 N77-14737  
Circumferential pressure probe  
[NASA-CASE-LAR-13775-1] c 35 N90-23706

**HUMAN FACTORS ENGINEERING**

Shock absorbing support and restraint means Patent  
[NASA-CASE-XMS-01240] c 05 N70-35152  
Harness assembly Patent  
[NASA-CASE-MFS-14671] c 05 N71-12341  
Multiple circuit switch apparatus with improved pivot actuator structure Patent  
[NASA-CASE-XAC-03777] c 10 N71-15909  
Three-axis finger tip controller for switches Patent  
[NASA-CASE-XAC-02405] c 09 N71-16089  
Extravehicular tunnel suit system Patent  
[NASA-CASE-MSC-12243-1] c 05 N71-24728  
EEG sleep analyzer and method of operation Patent  
[NASA-CASE-MSC-13282-1] c 05 N71-24729  
Spacesuit mobility joints  
[NASA-CASE-ARC-11058-1] c 54 N78-31735  
Spacesuit torso closure  
[NASA-CASE-ARC-11100-1] c 54 N78-31736

Apparatus and method of inserting a microelectrode in body tissue or the like using vibration means  
[NASA-CASE-NPO-13910-1] c 52 N79-27836  
Locking mechanism for orthopedic braces  
[NASA-CASE-GSC-12082-2] c 52 N81-25661  
Urine collection apparatus — feminine hygiene  
[NASA-CASE-MSC-18381-1] c 52 N81-28740  
Spectrally balanced chromatic landing approach lighting system  
[NASA-CASE-ARC-10990-1] c 04 N82-16059  
Thermal garment  
[NASA-CASE-XMS-03694-1] c 54 N82-29002  
Kinesimetric method and apparatus  
[NASA-CASE-MSC-18929-1] c 39 N83-20280  
Torso sizing ring construction for hard space suit  
[NASA-CASE-ARC-11616-1] c 54 N86-28618  
Shoulder and hip joint for hard space suits  
[NASA-CASE-ARC-11543-1] c 54 N86-28620  
Multi-adjustable headband — for headsets  
[NASA-CASE-KSC-11322-1] c 54 N89-29953

**HUMAN PERFORMANCE**

Color perception tester  
[NASA-CASE-KSC-10278] c 05 N72-16015

**HUMAN REACTIONS**

Reaction tester  
[NASA-CASE-MSC-13604-1] c 05 N73-13114  
Visual accommodation trainer-tester  
[NASA-CASE-ARC-11426-2] c 52 N89-16256

**HUMAN WASTES**

Reduced gravity fecal collector seat and urinal  
[NASA-CASE-MFS-22102-1] c 54 N74-20725  
Automatic biowaste sampling  
[NASA-CASE-MSC-14640-1] c 54 N76-14804  
Absorbent product to absorb fluids — for collection of human wastes  
[NASA-CASE-MSC-18223-1] c 24 N82-29362  
Absorbent product and articles made therefrom  
[NASA-CASE-MSC-18223-2] c 54 N84-11758

**HUMIDITY**

Passive intrusion detection system  
[NASA-CASE-NPO-13804-1] c 33 N80-23559  
Apparatus for supplying conditioned air at a substantially constant temperature and humidity  
[NASA-CASE-GSC-12181-1] c 31 N80-32583

**HUMIDITY MEASUREMENT**

Water-absorbing capacitor system for measuring relative humidity  
[NASA-CASE-NPO-16544-1-CU] c 35 N87-22953

**HYBRID CIRCUITS**

Integrating IR detector imaging systems  
[NASA-CASE-NPO-15805-1] c 74 N84-28590  
Hybrid power semiconductor  
[NASA-CASE-LEW-13922-1] c 33 N86-20672  
Hermetically sealable package for hybrid solid-state electronic devices and the like  
[NASA-CASE-MSC-20181-1] c 33 N88-23941

**HYBRID COMPUTERS**

Adaptive voting computer system  
[NASA-CASE-MSC-13932-1] c 62 N74-14920

**HYBRID PROPELLANTS**

Solid propellant liner Patent  
[NASA-CASE-XNP-09744] c 27 N71-16392

**HYDRAULIC CONTROL**

Shear modulated fluid amplifier Patent  
[NASA-CASE-MFS-10412] c 12 N71-17578  
Multiple orifice throttle valve Patent  
[NASA-CASE-XNP-09698] c 15 N71-18580  
Fluidic-thermochromic display device Patent  
[NASA-CASE-ERC-10031] c 12 N71-18603  
Hydraulic transformer Patent  
[NASA-CASE-MFS-20830] c 15 N71-30028  
Hydraulic drain means for servo-systems  
[NASA-CASE-NPO-10316-1] c 37 N77-22479

**HYDRAULIC EQUIPMENT**

Support apparatus for dynamic testing Patent  
[NASA-CASE-XMF-01772] c 11 N70-41677  
Hydraulic support for dynamic testing Patent  
[NASA-CASE-XMF-03248] c 11 N71-10604  
Hydraulic drive mechanism Patent  
[NASA-CASE-XMS-03252] c 15 N71-10658  
Anti-backlash circuit for hydraulic drive system Patent  
[NASA-CASE-XNP-01020] c 03 N71-12260  
Hydraulic grip Patent  
[NASA-CASE-XLA-05100] c 15 N71-17696  
Shock absorber Patent  
[NASA-CASE-XAC-03722] c 15 N71-21530  
Hydraulic casting of liquid polymers Patent  
[NASA-CASE-XNP-07659] c 06 N71-22975  
Energy limiter for hydraulic actuators Patent  
[NASA-CASE-ARC-10131-1] c 15 N71-27754  
Mechanically limited, electrically operated hydraulic valve system for aircraft controls Patent  
[NASA-CASE-XAC-00048] c 02 N71-29128  
Hydraulic transformer Patent  
[NASA-CASE-MFS-20830] c 15 N71-30028

- Mechanically extendible telescoping boom  
[NASA-CASE-NPO-11118] c 03 N72-25021
- Geysering inhibitor for vertical cryogenic transfer pipe  
[NASA-CASE-KSC-10615] c 15 N73-12486
- Redundant hydraulic control system for actuators  
[NASA-CASE-MFS-20944] c 15 N73-13466
- Combined pressure regulator and shutoff valve  
[NASA-CASE-NPO-13201-1] c 37 N75-15050
- Ultrasonically bonded valve assembly  
[NASA-CASE-NPO-13360-1] c 37 N75-25185
- Filter regeneration systems — a system for regenerating a system filter in a fluid flow line  
[NASA-CASE-MSC-14273-1] c 34 N75-33342
- Quick disconnect filter coupling  
[NASA-CASE-MFS-22323-1] c 37 N76-14463
- Actuator device for artificial leg  
[NASA-CASE-MFS-23225-1] c 52 N77-14735
- Phase-angle controller for Stirling engines  
[NASA-CASE-NPO-14388-1] c 37 N81-17432
- Underground mineral extraction  
[NASA-CASE-NPO-14140-1] c 43 N81-26509
- Gas-to-hydraulic power converter  
[NASA-CASE-MSC-18794-1] c 44 N83-14693
- Tubing and cable cutting tool  
[NASA-CASE-LAR-12786-1] c 37 N84-28085
- Personnel emergency carrier vehicle  
[NASA-CASE-KSC-11282-1] c 85 N87-21755
- Fatigue testing a plurality of test specimens and method  
[NASA-CASE-MFS-28118-1] c 39 N87-25601
- Control surface actuator  
[NASA-CASE-LAR-12852-1] c 05 N89-11738
- Passively activated prehensile digit for a robotic end effector  
[NASA-CASE-NPO-16766-1-CU] c 37 N89-13785
- HYDRAULIC FLUIDS**  
Free-piston regenerative hot gas hydraulic engine  
[NASA-CASE-LEW-12274-1] c 37 N80-31790
- HYDRAULIC JETS**  
Warm fog dissipation using large volume water sprays  
[NASA-CASE-MFS-25962-1] c 09 N89-25242
- HYDRAZINE ENGINES**  
Reciprocating engines  
[NASA-CASE-MSC-16239-1] c 37 N81-32510
- HYDRAZINE NITROFORM**  
Hydrazinium nitroformate propellant with saturated polymeric hydrocarbon binder  
[NASA-CASE-NPO-12015] c 27 N73-16764
- HYDRAZINES**  
Ignition means for monopropellant Patent  
[NASA-CASE-XNP-00876] c 28 N70-41311
- Solder flux which leaves corrosion-resistant coating  
[NASA-CASE-XNP-03459-2] c 18 N71-15688
- Prevention of hydrogen embrittlement of high strength steel by hydrazine compositions — by adding potassium hydroxide to hydrazine  
[NASA-CASE-NPO-12122-1] c 24 N76-14203
- HYDRIDES**  
Ten degree Kelvin hydride refrigerator  
[NASA-CASE-NPO-16393-1-CU] c 31 N87-21159
- HYDROCARBON COMBUSTION**  
In-situ laser retorting of oil shale  
[NASA-CASE-LEW-12217-1] c 43 N78-14452
- HYDROCARBON FUEL PRODUCTION**  
Molten salt pyrolysis of latex — synthetic hydrocarbon fuel production using the Guayule shrub  
[NASA-CASE-NPO-14315-1] c 27 N81-17261
- HYDROCARBON FUELS**  
Apparatus for making a metal slurry product Patent  
[NASA-CASE-XLE-00010] c 15 N70-33382
- Hydrogen rich gas generator  
[NASA-CASE-NPO-13342-2] c 44 N76-29700
- Hydrogen rich gas generator  
[NASA-CASE-NPO-13464-2] c 44 N76-29704
- Dual-fuel, dual-mode rocket engine  
[NASA-CASE-LAR-13773-1] c 20 N90-19298
- Regenerative Cu La zeolite supported desulfurizing sorbents  
[NASA-CASE-NPO-17480-1-CU] c 25 N90-26098
- HYDROCARBONS**  
Hydrazinium nitroformate propellant with saturated polymeric hydrocarbon binder  
[NASA-CASE-NPO-12015] c 27 N73-16764
- Hydrogen rich gas generator  
[NASA-CASE-NPO-13342-1] c 37 N76-16446
- Combustion engine — for air pollution control  
[NASA-CASE-NPO-13671-1] c 37 N77-31497
- Curable liquid hydrocarbon prepolymers containing hydroxyl groups and process for producing same  
[NASA-CASE-NPO-13137-1] c 27 N80-32514
- Technique for measuring gas conversion factors  
[NASA-CASE-LAR-13220-1] c 34 N86-12547
- Method and device for determining heats of combustion of gaseous hydrocarbons  
[NASA-CASE-LAR-13528-1] c 25 N88-29002
- Some 1-(diorganoxyphosphonyl)methyl-2,4- and -2,6-dinitro-benzenes  
[NASA-CASE-ARC-11425-3] c 23 N90-23475
- HYDROCHLORIC ACID**  
Indicator providing continuous indication of the presence of a specific pollutant in air  
[NASA-CASE-NPO-13474-1] c 45 N76-21742
- HYDROCHLORIDES**  
Method and apparatus for rebalancing a REDOX flow cell system  
[NASA-CASE-LEW-14127-1] c 33 N86-20680
- HYDRODYNAMICS**  
Dual clearance squeeze film damper  
[NASA-CASE-LEW-13506-1] c 37 N85-33490
- Hydrodynamic skin-friction reduction  
[NASA-CASE-LAR-14078-1-CU] c 34 N90-27071
- HYDROFOILS**  
Hydrofoil Patent  
[NASA-CASE-XLA-00229] c 12 N70-33305
- HYDROFORMING**  
Hydroforming techniques using epoxy molds Patent  
[NASA-CASE-XLE-05641-1] c 15 N71-26346
- HYDROGEN**  
Method for detecting hydrogen gas  
[NASA-CASE-XMF-03873] c 06 N69-39733
- Prevention of pressure build-up in electrochemical cells  
[NASA-CASE-XGS-01419] c 03 N70-41864
- Pulse activated polarographic hydrogen detector  
[NASA-CASE-XMF-06531] c 14 N71-17575
- Hydrogen leak detection device Patent  
[NASA-CASE-MFS-11537] c 14 N71-20442
- Analysis of hydrogen-deuterium mixtures  
[NASA-CASE-NPO-11322] c 06 N72-25146
- Hydrogen fire blink detector  
[NASA-CASE-MFS-15063] c 14 N72-25412
- Process for separation of dissolved hydrogen from water by use of palladium and process for coating palladium with palladium black  
[NASA-CASE-MSC-13335-1] c 06 N72-31140
- Atomic hydrogen maser with bulb temperature control to remove wall shift in maser output frequency  
[NASA-CASE-HQN-10654-1] c 16 N73-13489
- Method of producing a storage bulb for an atomic hydrogen maser  
[NASA-CASE-NPO-13050-1] c 36 N75-15029
- Atomic standard with variable storage volume  
[NASA-CASE-GSC-11895-1] c 35 N76-15436
- Hydrogen rich gas generator  
[NASA-CASE-NPO-13342-1] c 37 N76-16446
- Hydrogen-bromine secondary battery  
[NASA-CASE-NPO-13237-1] c 44 N76-18641
- Hydrogen-rich gas generator  
[NASA-CASE-NPO-13464-1] c 44 N76-18642
- Solar hydrogen generator  
[NASA-CASE-LAR-11361-1] c 44 N77-22607
- Solar photolysis of water  
[NASA-CASE-NPO-13675-1] c 44 N77-32580
- Method and automated apparatus for detecting coliform organisms  
[NASA-CASE-MSC-16777-1] c 51 N80-27067
- Method of cross-linking polyvinyl alcohol and other water soluble resins  
[NASA-CASE-LEW-13103-1] c 27 N80-32516
- Fluidized bed desulfurization  
[NASA-CASE-NPO-15924-1] c 25 N85-35253
- HYDROGEN ATOMS**  
Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-1] c 28 N78-24365
- Atomic hydrogen storage — cryotrapping and magnetic field strength  
[NASA-CASE-LEW-12081-2] c 28 N80-20402
- Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-3] c 28 N81-14103
- HYDROGEN EMBRITTLEMENT**  
Prevention of hydrogen embrittlement of high strength steel by hydrazine compositions — by adding potassium hydroxide to hydrazine  
[NASA-CASE-NPO-12122-1] c 24 N76-14203
- HYDROGEN ENGINES**  
Hydrogen-fueled engine  
[NASA-CASE-NPO-13763-1] c 44 N78-33526
- HYDROGEN FUELS**  
Hydrogen rich gas generator  
[NASA-CASE-NPO-13342-2] c 44 N76-29700
- Hydrogen rich gas generator  
[NASA-CASE-NPO-13464-2] c 44 N76-29704
- Hydrogen-rich gas generator  
[NASA-CASE-NPO-13560-1] c 44 N77-10636
- Dual-fuel, dual-mode rocket engine  
[NASA-CASE-LAR-13773-1] c 20 N90-19298
- HYDROGEN IONS**  
Hydrogen hollow cathode ion source  
[NASA-CASE-LEW-12940-1] c 72 N80-33186
- HYDROGEN OXYGEN FUEL CELLS**  
Electrolytically regenerative hydrogen-oxygen fuel cell Patent  
[NASA-CASE-XLE-04526] c 03 N71-11052
- Passively regulated water electrolysis rocket engine Patent  
[NASA-CASE-XGS-08729] c 28 N71-14044
- HYDROGEN PEROXIDE**  
Decomposition unit Patent  
[NASA-CASE-XMS-00583] c 28 N70-38504
- HYDROGEN PRODUCTION**  
Start up system for hydrogen generator used with an internal combustion engine  
[NASA-CASE-NPO-13849-1] c 28 N80-10374
- Thermochemical generation of hydrogen  
[NASA-CASE-NPO-15015-1] c 25 N82-28368
- Liquid hydrogen polygeneration system and process  
[NASA-CASE-KSC-11304-2] c 28 N86-23744
- HYDROGENATION**  
Production of high purity silicon carbide Patent  
[NASA-CASE-XLA-00158] c 26 N70-36805
- Compact hydrogenator  
[NASA-CASE-NPO-11682-1] c 35 N74-15127
- HYDROLOGY**  
Radar target for remotely sensing hydrological phenomena  
[NASA-CASE-LAR-12344-1] c 43 N80-18498
- HYDROLYSIS**  
Hydrodesulfurization of chlorinated coal  
[NASA-CASE-NPO-15304-1] c 25 N83-31743
- HYDROSTATIC PRESSURE**  
Method and apparatus for simulating gravitational forces on a living organism  
[NASA-CASE-MSC-20202-1] c 54 N84-16803
- HYDROSTATICS**  
Hydrostatic bearing support  
[NASA-CASE-LEW-11158-1] c 37 N77-28486
- HYDROXIDES**  
Method for determining presence of OH in magnesium oxide  
[NASA-CASE-NPO-10774] c 06 N72-17095
- Separator for alkaline electric batteries and method of making  
[NASA-CASE-GSC-10018-1] c 44 N82-24644
- Synthesis of dawsonites — for use in fire extinguishing operations  
[NASA-CASE-ARC-11326-1] c 25 N83-33977
- HYDROXYL COMPOUNDS**  
Synthesis of polyformals  
[NASA-CASE-ARC-11244-1] c 23 N82-16174
- HYGIENE**  
Urine collection apparatus — feminine hygiene  
[NASA-CASE-MSC-18381-1] c 52 N81-28740
- HYGROMETERS**  
Polymeric electrolytic hygrometer  
[NASA-CASE-NPO-13948-1] c 35 N78-25391
- Trace water sensor  
[NASA-CASE-NPO-15722-1] c 35 N85-29212
- HYGROSCOPICITY**  
Method of evaluating moisture barrier properties of encapsulating materials Patent  
[NASA-CASE-NPO-10051] c 18 N71-24934
- HYPERCUBE MULTIPROCESSORS**  
A method of up-front load balancing for local memory parallel processors  
[NASA-CASE-MSC-21348-1] c 62 N89-24084
- Fault tolerant hypercube computer system architecture  
[NASA-CASE-NPO-16859-1-CU] c 60 N90-21527
- HYPERFINE STRUCTURE**  
Process for producing dispersion strengthened nickel with aluminum Patent  
[NASA-CASE-XLE-06969] c 17 N71-24142
- HYPERGOLIC ROCKET PROPELLANTS**  
Apparatus for igniting solid propellants Patent  
[NASA-CASE-XLE-00207] c 28 N70-33375
- Small rocket engine Patent  
[NASA-CASE-XLE-00685] c 28 N70-41992
- Method of igniting solid propellants Patent  
[NASA-CASE-XLE-01988] c 27 N71-15634
- HYPERSONIC AIRCRAFT**  
Multistage aerospace craft — perspective drawings of conceptual design  
[NASA-CASE-XMF-02263] c 05 N74-10907
- HYPERSONIC FLIGHT**  
Hypersonic airbreathing missile  
[NASA-CASE-LAR-12264-1] c 15 N78-32168
- HYPERSONIC FLOW**  
Hypersonic test facility Patent  
[NASA-CASE-XLA-05378] c 11 N71-21475
- HYPERSONIC SPEED**  
Reentry vehicle leading edge Patent  
[NASA-CASE-XLA-00165] c 31 N70-33242
- Landing arrangement for aerospace vehicle Patent  
[NASA-CASE-XLA-00805] c 31 N70-38010
- Variable geometry manned orbital vehicle Patent  
[NASA-CASE-XLA-03691] c 31 N71-15674

## HYPERSONIC VEHICLES

- High speed flight vehicle control Patent  
[NASA-CASE-XLA-08967] c 02 N71-27088  
Apparatus and method for generating large mass flow  
of high temperature air at hypersonic speeds  
[NASA-CASE-LAR-10578-1] c 12 N73-25262  
Apparatus and method for generating large mass flow  
of high temperature air at hypersonic speeds  
[NASA-CASE-LAR-10612-1] c 12 N73-28144

### HYPERSONIC VEHICLES

- Techniques for insulating cryogenic fuel containers  
Patent  
[NASA-CASE-XLA-01967] c 31 N70-42015

### HYPERSONIC WIND TUNNELS

- Sound shield  
[NASA-CASE-LAR-12883-1] c 71 N83-17235  
Quantitative surface temperature measurement using  
two-color thermographic phosphors and video  
equipment  
[NASA-CASE-LAR-13740-1] c 35 N90-22770

### HYPERHERMIA

- Hyperthermia heating apparatus — cancer therapy  
[NASA-CASE-NPO-14549-2] c 52 N82-33996

### HYPERVELOCITY GUNS

- Dust particle injector for hypervelocity accelerators  
Patent  
[NASA-CASE-XGS-06628] c 24 N71-16213  
Hypervelocity gun Patent  
[NASA-CASE-XAC-05902] c 11 N71-18578  
Collapsible pistons  
[NASA-CASE-MS-C-13789-1] c 11 N73-32152  
Hypervelocity gun — using both electric and chemical  
energy for projectile propulsion  
[NASA-CASE-XLE-03186-1] c 09 N79-21084

### HYPERVELOCITY IMPACT

- Method of and device for determining the characteristics  
and flux distribution of micrometeorites — scanning  
puncture holes in sheet material with photoelectric cell  
[NASA-CASE-NPO-12127-1] c 91 N74-13130  
Hypervelocity impact shield  
[NASA-CASE-MS-C-21420-1] c 18 N90-26858

### HYPERVELOCITY PROJECTILES

- Impact measuring technique  
[NASA-CASE-LAR-10913] c 14 N72-16282  
Multiple image storing system for high speed projectile  
holography  
[NASA-CASE-MFS-20596] c 14 N72-17324

### HYPERVELOCITY WIND TUNNELS

- Hypersonic test facility Patent  
[NASA-CASE-XLA-00378] c 11 N71-15925  
Hypersonic test facility Patent  
[NASA-CASE-XLA-05378] c 11 N71-21475

### HYSTERESIS

- Belleville spring assembly with elastic guides  
[NASA-CASE-XNP-09452] c 15 N69-27504

## ICE

- Ice detector  
[NASA-CASE-LAR-13776-1] c 35 N88-29149

### IDENTIFYING

- Lightning discharge identification system  
[NASA-CASE-KSC-11099-1] c 47 N82-24779

### IGNITERS

- Solid propellant rocket motor  
[NASA-CASE-NPO-11559] c 28 N73-24784  
Remote fire stack igniter — with solenoid-controlled  
valve  
[NASA-CASE-MFS-21675-1] c 25 N74-33378  
Molded composite pyrogen igniter for rocket motors —  
solid propellant ignition  
[NASA-CASE-LAR-12018-1] c 20 N78-24275  
Plasma igniter for internal combustion engine  
[NASA-CASE-NPO-13828-1] c 37 N79-11405  
Hollow cathode apparatus  
[NASA-CASE-NPO-15560-1] c 33 N85-21491  
Low gravity exothermic heating/cooling apparatus  
[NASA-CASE-MS-C-25707-1] c 35 N85-29214

### IGNITION

- Magnetically controlled plasma accelerator Patent  
[NASA-CASE-XLA-00327] c 25 N71-29184  
Device and method for frictionally testing materials for  
ignitability  
[NASA-CASE-MS-C-20622-1] c 25 N86-19413  
Ignitability test method and apparatus  
[NASA-CASE-LAR-13996-1-SB] c 25 N90-15161

### IGNITION LIMITS

- High voltage pulse generator Patent  
[NASA-CASE-MS-C-12178-1] c 09 N71-13518

### IGNITION SYSTEMS

- Apparatus for igniting solid propellants Patent  
[NASA-CASE-XLE-00207] c 28 N70-33375  
Ignition system for monopropellant combustion devices  
Patent  
[NASA-CASE-XNP-00249] c 28 N70-38249

- Rocket motor system Patent  
[NASA-CASE-XLE-00323] c 28 N70-38505  
Ignition means for monopropellant Patent  
[NASA-CASE-XNP-00876] c 28 N70-41311  
Sustained arc ignition system  
[NASA-CASE-LEW-12444-1] c 33 N77-28385

### IGNITION TEMPERATURE

- Autoignition test cell Patent  
[NASA-CASE-KSC-10198] c 11 N71-28629

### ILLUMINATORS

- Image magnification adapter for cameras Patent  
[NASA-CASE-XMF-03844-1] c 14 N71-26474  
Illumination system including a virtual light source  
Patent  
[NASA-CASE-HQN-10781] c 23 N71-30292

### IMAGE ANALYSIS

- Real-time image difference detection using a polarization  
rotation spatial light modulator  
[NASA-CASE-NPO-17144-1-CU] c 74 N88-25305  
Method and apparatus for sensor fusion  
[NASA-CASE-MS-C-21334-1] c 32 N89-25360

### IMAGE CONTRAST

- Video signal enhancement system with dynamic range  
compression and modulation index expansion Patent  
[NASA-CASE-NPO-10343] c 07 N71-27341  
Method and apparatus for producing an image from a  
transparent object  
[NASA-CASE-GSC-11989-1] c 74 N77-28932

### IMAGE CONVERTERS

- Deep trap, laser activated image converting system  
[NASA-CASE-NPO-13131-1] c 36 N75-19652  
Resistive anode image converter  
[NASA-CASE-HQN-10876-1] c 33 N76-27473  
Wedge immersed thermistor bolometers  
[NASA-CASE-XGS-01245-1] c 35 N79-33449  
Photocapacitive image converter  
[NASA-CASE-LAR-12513-1] c 44 N82-32841

### IMAGE CORRELATORS

- Multiple hologram recording and readout system  
Patent  
[NASA-CASE-ERC-10151] c 16 N71-29131  
Automatic focus control for facsimile cameras  
[NASA-CASE-LAR-11213-1] c 35 N75-15014  
Azimuth correlator for real-time synthetic aperture radar  
image processing  
[NASA-CASE-NPO-14019-1] c 32 N79-14268  
Servomechanism for Doppler shift compensation in  
optical correlator for synthetic aperture radar  
[NASA-CASE-NPO-14988-1] c 32 N83-18975  
Optical stereo video signal processor  
[NASA-CASE-MFS-25752-1] c 74 N86-21348

### IMAGE DISSECTOR TUBES

- Apparatus for calibrating an image dissector tube  
[NASA-CASE-MFS-22208-1] c 33 N75-26244  
Electronic optical transfer function analyzer  
[NASA-CASE-MFS-21672-1] c 74 N76-19935

### IMAGE ENHANCEMENT

- Method and means for an improved electron beam  
scanning system Patent  
[NASA-CASE-ERC-10552] c 09 N71-12539  
Physical correction filter for improving the optical quality  
of an image  
[NASA-CASE-HQN-10542-1] c 74 N75-25706  
Method of obtaining intensified image from developed  
photographic films and plates  
[NASA-CASE-MFS-23461-1] c 35 N79-10389  
Dynamic range compression/expansion of light beams  
by photorefractive crystals  
[NASA-CASE-NPO-17140-1-CU] c 74 N89-14077

### IMAGE FILTERS

- Motion picture camera for optical pyrometry Patent  
[NASA-CASE-XLA-00062] c 14 N70-33254  
Compact spectroradiometer  
[NASA-CASE-HQN-10683] c 14 N71-34389  
Physical correction filter for improving the optical quality  
of an image  
[NASA-CASE-HQN-10542-1] c 74 N75-25706

### IMAGE INTENSIFIERS

- Magnifying image intensifier  
[NASA-CASE-GSC-12010-1] c 74 N78-18905  
Method of obtaining intensified image from developed  
photographic films and plates  
[NASA-CASE-MFS-23461-1] c 35 N79-10389

### IMAGE PROCESSING

- Azimuth correlator for real-time synthetic aperture radar  
image processing  
[NASA-CASE-NPO-14019-1] c 32 N79-14268  
Interleaving device  
[NASA-CASE-GSC-12111-2] c 33 N81-29342  
Clutter free synthetic aperture radar correlator  
[NASA-CASE-NPO-14035-1] c 32 N83-19968  
Longwall shearer tracking system  
[NASA-CASE-MFS-25717-1] c 35 N84-33768  
Data volume reduction for imaging radar polarimetry  
[NASA-CASE-NPO-17184-1-CU] c 32 N88-26541

- Programmable pipelined image processor  
[NASA-CASE-NPO-16461-1CU] c 60 N89-26400

### IMAGE RESOLUTION

- Constant magnification optical tracking system  
[NASA-CASE-NPO-14813-1] c 74 N82-24072

### IMAGE ROTATION

- Rhomboid prism pair for rotating the plane of parallel  
light beams  
[NASA-CASE-ARC-11311-1] c 74 N83-13978

### IMAGE TUBES

- Image tube — deriving electron beam replica of image  
[NASA-CASE-GSC-11602-1] c 33 N74-21850  
System for producing chroma signals  
[NASA-CASE-MS-C-14683-1] c 74 N77-18893

### IMAGERY

- Television monitor field shifter and an opto-electronic  
method for obtaining a stereo image of optimal depth  
resolution and reduced depth distortion on a single  
screen  
[NASA-CASE-NPO-17249-1-CU] c 32 N89-28676  
Atmospheric autorotating imaging device  
[NASA-CASE-NPO-17390-1-CU] c 35 N90-22769

### IMAGES

- Image magnification adapter for cameras Patent  
[NASA-CASE-XMF-03844-1] c 14 N71-26474  
Stereoscopic television system and apparatus  
[NASA-CASE-ARC-10160-1] c 23 N72-27728  
Wide-angle flat field telescope  
[NASA-CASE-GSC-12825-1] c 74 N86-28732

### IMAGING RADAR

- Data volume reduction for imaging radar polarimetry  
[NASA-CASE-NPO-17184-1-CU] c 32 N88-26541

### IMAGING TECHNIQUES

- Optical mirror apparatus Patent  
[NASA-CASE-ERC-10001] c 23 N71-24868  
Method and apparatus for eliminating coherent noise  
in a coherent energy imaging system without destroying  
spatial coherence  
[NASA-CASE-GSC-11133-1] c 23 N72-11568  
Phototransistor imaging system  
[NASA-CASE-MFS-20809] c 23 N73-13660  
Multispectral imaging system  
[NASA-CASE-MS-C-12404-1] c 23 N73-13661  
Multiple pass reimaging optical system  
[NASA-CASE-ARC-10194-1] c 23 N73-20741  
Ritchey-Chretien Telescope  
[NASA-CASE-GSC-11487-1] c 14 N73-30393  
Data storage, image tube type  
[NASA-CASE-MS-C-14053-1] c 60 N74-12888  
Optical instruments  
[NASA-CASE-MS-C-14096-1] c 74 N74-15095  
Electron microscope aperture system  
[NASA-CASE-ARC-10448-3] c 35 N77-14408  
Method and apparatus for producing an image from a  
transparent object  
[NASA-CASE-GSC-11989-1] c 74 N77-28932  
Full color hybrid display for aircraft simulators — landing  
aids  
[NASA-CASE-ARC-10903-1] c 09 N78-18083  
Multispectral imaging and analysis system — using  
charge coupled devices and linear arrays  
[NASA-CASE-NPO-13691-1] c 43 N79-17288  
System and method for obtaining wide screen Schlieren  
photographs  
[NASA-CASE-NPO-14174-1] c 74 N79-20856  
Low intensity X-ray and gamma-ray imaging device —  
fiber optics  
[NASA-CASE-GSC-12263-1] c 74 N79-20857  
Diffraction grating configuration for X-ray and ultraviolet  
focusing  
[NASA-CASE-GSC-12357-1] c 74 N80-21140  
Multispectral scanner optical system  
[NASA-CASE-MS-C-18255-1] c 74 N80-33210  
System for forming a quadrified image comprising  
angularly related fields of view of a three dimensional  
object  
[NASA-CASE-NPO-14219-1] c 74 N81-17886  
Time delay and integration detectors using charge  
transfer devices  
[NASA-CASE-GSC-12324-1] c 33 N81-33403  
Image readout device with electronically variable spatial  
resolution  
[NASA-CASE-LAR-12633-1] c 33 N82-24416  
Low intensity X-ray and gamma-ray spectrometer  
[NASA-CASE-GSC-12587-1] c 35 N82-32659  
Multibeam single frequency synthetic aperture radar  
processor for imaging separate range swaths  
[NASA-CASE-NPO-14525-2] c 32 N83-31918  
High speed multi focal plane optical system  
[NASA-CASE-GSC-12683-1] c 74 N83-36898  
Real-time 3-D X-ray and gamma-ray viewer  
[NASA-CASE-GSC-12640-1] c 74 N84-11920  
Longwall shearer tracking system  
[NASA-CASE-MFS-25717-1] c 35 N84-33768  
Optical system  
[NASA-CASE-NPO-15801-1] c 74 N85-23396

- Three-dimensional and tomographic imaging device for X-ray and gamma-ray emitting objects  
[NASA-CASE-GSC-12851-1] c 35 N85-30281  
Method and apparatus for Delta Kappa synthetic aperture radar measurement of ocean current  
[NASA-CASE-NPO-15704-1] c 32 N85-34327  
Multispectral linear array multiband selection device  
[NASA-CASE-GSC-12811-1] c 74 N86-29650  
Optical scanner  
[NASA-CASE-GSC-12897-1] c 74 N87-21679  
Apparatus for imaging deep arterial and coronary lesions  
[NASA-CASE-NPO-17439-1-CU] c 52 N90-16391  
Noncontact temperature pattern measuring device  
[NASA-CASE-NPO-17824-1-CU] c 36 N90-17132  
Quantitative surface temperature measurement using two-color thermographic phosphors and video equipment  
[NASA-CASE-LAR-13740-1] c 35 N90-22770  
Improving the geometric fidelity of imaging systems employing sensor arrays  
[NASA-CASE-NPO-17970-1-CU] c 43 N90-26384  
Variable magnification variable dispersion glancing incidence imaging x ray spectroscopic telescope  
[NASA-CASE-MFS-28013-3] c 89 N90-27594  
Multispectral variable magnification glancing incidence x ray telescope  
[NASA-CASE-MFS-28013-4] c 89 N90-27595
- IMIDES**  
Imidazopyrrolone/imide copolymers Patent  
[NASA-CASE-XLA-08802] c 06 N71-11238  
Molding process for imidazopyrrolone polymers  
[NASA-CASE-LAR-10547-1] c 31 N74-13177  
Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-1] c 27 N83-31854  
Polyphenylene ethers with imide linking groups  
[NASA-CASE-LAR-12980-1] c 27 N84-22749  
Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-2] c 27 N85-21347  
High performance mixed bisimide resins and composites based thereon  
[NASA-CASE-ARC-11538-1SB] c 24 N88-21590  
Fire and heat resistant laminating resins based on maleimido substituted aromatic cyclotriphosphazene polymer  
[NASA-CASE-ARC-11428-2] c 27 N87-16909  
Process for preparing phthalocyanine polymer from imide containing bisphthalonitrile  
[NASA-CASE-ARC-11511-2] c 27 N87-21112  
Fire and heat resistant laminating resins based on maleimido and citraconimido substituted 1-(diorgano oxyphosphonyl) methyl -2,4- and -2,6- diaminobenzenes  
[NASA-CASE-ARC-11533-3] c 27 N87-24564  
Aromatic cyclotriphosphazenes  
[NASA-CASE-ARC-11428-3] c 23 N88-24692  
Fire and heat resistant laminating resin based on maleimido and citraconimido substituted 1-(diorganooxyphosphonyl-methyl)-2,4- and -2,6-diaminobenzenes  
[NASA-CASE-ARC-11533-2] c 27 N89-16042  
Acetylene terminated aspartimides and resins therefrom  
[NASA-CASE-LAR-14188-1] c 27 N90-23545  
Imide/arylene ether copolymers  
[NASA-CASE-LAR-14159-1-CU] c 27 N90-26953
- IMINES**  
Synthesis of polymeric schiff bases by schiff-base exchange reactions Patent  
[NASA-CASE-XMF-08651] c 06 N71-11236  
Direct synthesis of polymeric schiff bases from two amines and two aldehydes Patent  
[NASA-CASE-XMF-08655] c 06 N71-11239  
Synthesis of polymeric schiff bases by reaction of acetals and amine compounds Patent  
[NASA-CASE-XMF-08652] c 06 N71-11243  
Aromatic diamine-aromatic dialdehyde high molecular weight Schiff base polymers prepared in a monofunctional Schiff base Patent  
[NASA-CASE-XMF-03074] c 06 N71-24740
- IMMOBILIZATION**  
Stretcher Patent  
[NASA-CASE-XMF-06589] c 05 N71-23159  
Absolute focus lock for microscopes  
[NASA-CASE-LAR-10184] c 14 N72-22445  
Spine immobilization apparatus  
[NASA-CASE-ARC-11167-1] c 52 N81-25662  
Active hold-down for heat treating  
[NASA-CASE-NPO-16892-1-CU] c 37 N87-14704
- IMPACT**  
Impact energy absorbing system utilizing fractureable material  
[NASA-CASE-NPO-10671] c 15 N72-20443  
Cosmic dust or other similar outer space particles impact location detector  
[NASA-CASE-GSC-11291-1] c 25 N72-33696  
Impact position detector for outer space particles  
[NASA-CASE-GSC-11829-1] c 35 N75-27331  
Method and apparatus for determining time, direction and composition of impacting space particles  
[NASA-CASE-LAR-13392-1-CU] c 19 N90-10132
- IMPACT ACCELERATION**  
Suspended mass impact damper Patent  
[NASA-CASE-LAR-10193-1] c 15 N71-27146
- IMPACT DAMAGE**  
Micrometeoroid penetration measuring device Patent  
[NASA-CASE-XLA-00841] c 14 N71-23240  
Curved cap corrugated sheet  
[NASA-CASE-LAR-12884-1] c 18 N84-33450  
Impact tolerant material  
[NASA-CASE-LAR-12887-3] c 24 N90-21822  
Semi-active orbital debris sweeper  
[NASA-CASE-MSC-21534-1] c 18 N90-26860
- IMPACT LOADS**  
Force transducer Patent  
[NASA-CASE-XAC-01101] c 14 N70-41857  
Impact testing machine Patent  
[NASA-CASE-XNP-04817] c 14 N71-23225
- IMPACT RESISTANCE**  
Electric storage battery  
[NASA-CASE-NPO-11021] c 03 N72-20032  
Hybrid composite laminate structures  
[NASA-CASE-LEW-12118-1] c 24 N77-27188
- IMPACT STRENGTH**  
High impact pressure regulator Patent  
[NASA-CASE-NPO-10175] c 14 N71-18625
- IMPACT TESTING MACHINES**  
Lunar penetrometer Patent  
[NASA-CASE-XLA-00934] c 14 N71-22765  
Impact testing machine Patent  
[NASA-CASE-XNP-04817] c 14 N71-23225  
Impacting device for testing insulation  
[NASA-CASE-MFS-25862-2] c 37 N84-33807
- IMPACT TESTS**  
Impacting device for testing insulation  
[NASA-CASE-MFS-25862-2] c 37 N84-33807
- IMPACT TOLERANCES**  
High impact antenna Patent  
[NASA-CASE-NPO-10231] c 07 N71-26101  
Vehicular impact absorption system  
[NASA-CASE-NPO-14014-1] c 37 N79-10420
- IMPEDANCE**  
Low noise tuned amplifier  
[NASA-CASE-GSC-12567-1] c 33 N84-22887  
Power supply conditioning circuit  
[NASA-CASE-NPO-17233-1-CU] c 33 N88-29095  
Microwave field effect transistor  
[NASA-CASE-GSC-12442-2] c 33 N90-20282  
Noninvasive method and apparatus for monitoring the cure of polymeric materials  
[NASA-CASE-LAR-13465-1] c 27 N90-23544
- IMPEDANCE MATCHING**  
Signal multiplexer  
[NASA-CASE-XGS-01110] c 07 N69-24334  
Reflectorometer for receiver input impedance match measurement Patent  
[NASA-CASE-XNP-10843] c 07 N71-11267  
Radio frequency coaxial high pass filter Patent  
[NASA-CASE-XGS-01418] c 09 N71-23573  
Triaxial antenna Patent  
[NASA-CASE-XGS-02290] c 07 N71-28809
- IMPEDANCE MEASUREMENT**  
High impedance measuring apparatus Patent  
[NASA-CASE-XMS-08589-1] c 09 N71-20569  
Apparatus for measuring semiconductor device resistance  
[NASA-CASE-NPO-14424-1] c 33 N80-32650
- IMPELLERS**  
Turbomachinery shaft insert  
[NASA-CASE-MFS-28345-2] c 37 N89-28842
- IMPLANTATION**  
Telemeter adaptable for implanting in an animal Patent  
[NASA-CASE-XAC-05706] c 05 N71-12342  
Magnetic electrical connectors for biomedical percutaneous implants  
[NASA-CASE-KSC-11030-1] c 52 N77-25772  
Prosthetic occlusive device for an internal passageway  
[NASA-CASE-MFS-25740-1] c 52 N84-11744
- IMPLANTED ELECTRODES (BIOLOGY)**  
Pocket ECG electrode  
[NASA-CASE-ARC-11258-1] c 52 N80-33081  
Subcutaneous electrode structure  
[NASA-CASE-ARC-11117-1] c 52 N81-14612  
Implantable electrical device  
[NASA-CASE-GSC-12560-1] c 52 N82-29863
- IMPLOSIONS**  
Hypervelocity gun Patent  
[NASA-CASE-XAC-05902] c 11 N71-18578
- IMPREGNATING**  
Composite lamination method  
[NASA-CASE-LAR-12019-1] c 24 N78-17150  
Insoluble polyelectrolyte and ion-exchange hollow fiber impregnated therewith  
[NASA-CASE-NPO-13530-1] c 25 N81-17187  
High temperature silicon carbide impregnated insulating fabrics  
[NASA-CASE-MSC-18832-1] c 27 N83-18908
- IMPULSE GENERATORS**  
Percutaneous connector device  
[NASA-CASE-KSC-10849-1] c 52 N77-14738
- IMPURITIES**  
Method of making impurity-type semiconductor electrical contacts Patent  
[NASA-CASE-XMF-01016] c 26 N71-17818  
Method of mitigating titanium impurities effects in p-type silicon material for solar cells  
[NASA-CASE-NPO-14635-1] c 44 N80-24741  
Electromigration process for the purification of molten silicon during crystal growth  
[NASA-CASE-NPO-14831-1] c 76 N82-30105
- IN-FLIGHT MONITORING**  
System for use in conducting wake investigation for a wing in flight — differential pressure measurements for drag investigations  
[NASA-CASE-FRC-11024-1] c 02 N80-28300
- INCIDENCE**  
Method of and means for testing a glancing-incidence mirror system of an X-ray telescope  
[NASA-CASE-MFS-22409-2] c 74 N78-15880
- INCIDENT RADIATION**  
Solar cell assembly — for use under high intensity illumination  
[NASA-CASE-LEW-11549-1] c 44 N77-19571  
A compact fast wide angle broad band spectrometer optical system  
[NASA-CASE-NPO-17562-1-CU] c 74 N89-24153
- INCLINATION**  
Hingeless helicopter rotor with improved stability  
[NASA-CASE-ARC-10807-1] c 05 N77-17029
- INCOHERENT SCATTERING**  
Rapidly pulsed, high intensity, incoherent light source  
[NASA-CASE-XLE-2529-3] c 33 N74-20859
- INDICATING INSTRUMENTS**  
Missile stage separation indicator and stage initiator Patent  
[NASA-CASE-XLA-00791] c 03 N70-39930  
Inductive liquid level detection system Patent  
[NASA-CASE-XLE-01609] c 14 N71-10500  
Apparatus for the determination of the existence or non-existence of a bonding between two members Patent  
[NASA-CASE-MFS-13686] c 15 N71-18132  
Hydrogen fire detection system with logic circuit to analyze the spectrum of temporal variations of the optical spectrum  
[NASA-CASE-MFS-13130] c 10 N72-17173  
Fatigue failure load indicator  
[NASA-CASE-LAR-12027-1] c 39 N79-22537  
System for providing an integrated display of instantaneous information relative to aircraft attitude, heading, altitude, and horizontal situation  
[NASA-CASE-FRC-11005-1] c 06 N82-16075  
Film advance indicator  
[NASA-CASE-LAR-12474-1] c 35 N82-26828  
Adjustable indicating device for load position  
[NASA-CASE-MFS-28008-1] c 35 N85-20300  
Fluid leak indicator  
[NASA-CASE-MSC-20783-1] c 35 N86-20756
- INDIUM ALLOYS**  
Method for attaching a fused-quartz mirror to a conductive metal substrate  
[NASA-CASE-MFS-23405-1] c 26 N77-29260  
Solar cell collector  
[NASA-CASE-LEW-12552-1] c 44 N78-25527  
Aluminum alloy  
[NASA-CASE-LAR-13924-1-CU] c 26 N89-28621
- INDIUM COMPOUNDS**  
Liquid crystal light valve structures  
[NASA-CASE-MSC-20036-1] c 76 N85-33826
- INDUCTANCE**  
Current dependent filter inductance  
[NASA-CASE-ERC-10139] c 09 N72-17154  
Inductance device with vacuum insulation  
[NASA-CASE-LEW-10330-1] c 09 N72-27226  
Direct reading inductance meter  
[NASA-CASE-NPO-13792-1] c 35 N77-32455
- INDUCTION**  
Induction-type metal detector with increased scanning area capability  
[NASA-CASE-KSC-11386-1] c 35 N90-22023
- INDUCTION HEATING**  
Induction furnace with perforated tungsten foil shielding Patent  
[NASA-CASE-XLE-04026] c 14 N71-23267

- Apparatus for use in the production of ribbon-shaped crystals from a silicon melt  
[NASA-CASE-NPO-14297-1] c 33 N81-19389
- One-step dual purpose joining technique  
[NASA-CASE-LAR-12595-1] c 33 N82-26571
- Induction heating gun  
[NASA-CASE-LAR-13181-1] c 31 N85-29083
- INDUCTION MOTORS**
- Induction motor control system with voltage controlled oscillator circuit  
[NASA-CASE-MFS-21465-1] c 10 N73-32145
- Variable frequency inverter for ac induction motors with torque, speed and braking control  
[NASA-CASE-MFS-22088-1] c 33 N75-15874
- Power factor control system for AC induction motors  
[NASA-CASE-MFS-23280-1] c 33 N78-10376
- Three phase power factor controller  
[NASA-CASE-MFS-25535-1] c 33 N81-12330
- Power factor control system for ac induction motors  
[NASA-CASE-MFS-23988-1] c 33 N81-27395
- Motor power factor controller with a reduced voltage starter  
[NASA-CASE-MFS-25586-1] c 33 N82-11380
- Magnetic field control — electromechanical torquing device  
[NASA-CASE-MFS-23828-1] c 33 N82-26569
- Electrical power generating system  
[NASA-CASE-MFS-25302-1] c 33 N83-28319
- Triac failure detector  
[NASA-CASE-MFS-25607-1] c 33 N83-34190
- Control system for an induction motor with energy recovery  
[NASA-CASE-MFS-25477-1] c 33 N84-14424
- Three phase power factor controller  
[NASA-CASE-MFS-25535-2] c 33 N84-22885
- Motor power control circuit for ac induction motors  
[NASA-CASE-MFS-25323-1] c 33 N84-22886
- Coupling an induction motor type generator to ac power lines — making windmill generators compatible with public power lines  
[NASA-CASE-MFS-25302-2] c 33 N84-33660
- Three-phase power factor controller with induced EMF sensing  
[NASA-CASE-MFS-25852-1] c 33 N84-33661
- Solar powered actuator with continuously variable auxiliary power control  
[NASA-CASE-MFS-25637-1] c 44 N85-21769
- Power control for ac motor  
[NASA-CASE-MFS-25861-1] c 33 N85-22877
- INDUCTORS**
- Inductive liquid level detection system Patent  
[NASA-CASE-XLE-01609] c 14 N71-10500
- Vacuum deposition apparatus Patent  
[NASA-CASE-XMF-01667] c 15 N71-17647
- Constant frequency output two stage induction machine systems Patent  
[NASA-CASE-ERC-10065] c 09 N71-27364
- Elimination of current spikes in buck power converters  
[NASA-CASE-NPO-14505-1] c 33 N81-19393
- Improved high power/high frequency inductor  
[NASA-CASE-NPO-17830-1-CU] c 33 N90-27042
- INDUSTRIAL PLANTS**
- Process for making diamonds  
[NASA-CASE-MFS-20698-2] c 15 N73-19457
- INDUSTRIAL WASTES**
- Process of forming catalytic surfaces for wet oxidation reactions  
[NASA-CASE-MSC-14831-1] c 25 N78-10225
- Process for purification of waste water produced by a Kraft process pulp and paper mill  
[NASA-CASE-NPO-13847-2] c 85 N79-17747
- INERT ATMOSPHERE**
- Method for retarding dye fading during archival storage of developed color photographic film — inert atmosphere  
[NASA-CASE-MFS-23250-1] c 35 N82-11432
- INERTIA**
- Bidirectional step torque filter with zero backlash characteristic Patent  
[NASA-CASE-XGS-04227] c 15 N71-21744
- INERTIAL CONFINEMENT FUSION**
- Method and apparatus for producing gas-filled hollow spheres — target pellets for inertial confinement fusion  
[NASA-CASE-NPO-14596-3] c 31 N83-31896
- Contactless pellet fabrication  
[NASA-CASE-NPO-15592-1] c 71 N84-16940
- INERTIAL GUIDANCE**
- Hermetic sealed vibration damper Patent  
[NASA-CASE-MSC-10959] c 15 N71-26243
- INERTIAL NAVIGATION**
- Autonomous navigation system — gyroscopic pendulum for air navigation  
[NASA-CASE-ARC-11257-1] c 04 N81-21047
- INERTIAL PLATFORMS**
- Clamping assembly for inertial components Patent  
[NASA-CASE-XMS-02184] c 15 N71-20813
- Azimuth laying system Patent  
[NASA-CASE-XMF-01669] c 21 N71-23289
- Temperature compensated digital inertial sensor — circuit for maintaining inertial element of gyroscope or accelerometer at constant position  
[NASA-CASE-NPO-13044-1] c 35 N74-15094
- Attitude control system  
[NASA-CASE-MFS-22787-1] c 15 N77-10113
- Rim inertial measuring system  
[NASA-CASE-LAR-12052-1] c 18 N81-29152
- INERTIAL REFERENCE SYSTEMS**
- Attitude control system Patent  
[NASA-CASE-XGS-04393] c 21 N71-14159
- Inertial reference apparatus Patent  
[NASA-CASE-XAC-03107] c 23 N71-16098
- INFLATABLE SPACECRAFT**
- Thermal control of space vehicles Patent  
[NASA-CASE-XLA-01291] c 33 N70-36617
- Passive communication satellite Patent  
[NASA-CASE-XLA-00210] c 30 N70-40309
- Rotating mandrel for assembly of inflatable devices Patent  
[NASA-CASE-XLA-04143] c 15 N71-17687
- Method of making an inflatable panel Patent  
[NASA-CASE-XLA-03497] c 15 N71-23052
- Orbital escape device Patent  
[NASA-CASE-XMS-06162] c 31 N71-28851
- INFLATABLE STRUCTURES**
- Aeroflexible structures  
[NASA-CASE-XLA-06095] c 01 N69-39981
- Life raft Patent  
[NASA-CASE-XMS-00863] c 05 N70-34857
- Life preserver Patent  
[NASA-CASE-XMS-00864] c 05 N70-36493
- Inflatable honeycomb Patent  
[NASA-CASE-XLA-00204] c 32 N70-36536
- Inflatable radar reflector unit Patent  
[NASA-CASE-XMS-00893] c 07 N70-40063
- Excessive temperature warning system Patent  
[NASA-CASE-XLA-01926] c 14 N71-15620
- Inflation system for balloon type satellites Patent  
[NASA-CASE-XGS-03351] c 31 N71-16081
- Aerodynamic protection for space flight vehicles Patent  
[NASA-CASE-XNP-02507] c 31 N71-17679
- Self supporting space vehicle Patent  
[NASA-CASE-XLA-00117] c 31 N71-17680
- Conforming polisher for aspheric surface of revolution Patent  
[NASA-CASE-XGS-02884] c 15 N71-22705
- Method of making inflatable honeycomb Patent  
[NASA-CASE-XLA-03492] c 15 N71-22713
- Collapsible antenna boom and transmission line Patent  
[NASA-CASE-MFS-20068] c 07 N71-27191
- Inflatable tether Patent  
[NASA-CASE-XMS-10993] c 15 N71-28936
- Inflatable transpiration cooled nozzle  
[NASA-CASE-MFS-20619] c 28 N72-11708
- Modification of one man life raft  
[NASA-CASE-LAR-10241-1] c 54 N74-14845
- Emergency space-suit helmet  
[NASA-CASE-MSC-10954-1] c 54 N78-18761
- Pressure control valve — inflating flexible bladders  
[NASA-CASE-ARC-11251-1] c 37 N81-17433
- Pneumatic inflatable end effector  
[NASA-CASE-MFS-23696-1] c 54 N81-26718
- Inflatable device for installing strain gage bridges  
[NASA-CASE-FRC-11068-1] c 35 N84-12443
- Ballast system for maintaining constant pressure in a glove box  
[NASA-CASE-NPO-17786-1-CU] c 35 N90-17104
- INFORMATION RETRIEVAL**
- Multiple hologram recording and readout system Patent  
[NASA-CASE-ERC-10151] c 16 N71-29131
- INFRARED DETECTORS**
- Temperature sensitive capacitor device  
[NASA-CASE-XNP-09750] c 14 N69-39937
- Sight switch using an infrared source and sensor Patent  
[NASA-CASE-XMF-03934] c 09 N71-22985
- Infrared detectors  
[NASA-CASE-LAR-10728-1] c 14 N73-12445
- Doped Josephson tunneling junction for use in a sensitive IR detector  
[NASA-CASE-NPO-13348-1] c 33 N75-31332
- Multispectral scanner optical system  
[NASA-CASE-MSC-18255-1] c 74 N80-33210
- Broadband optical radiation detector  
[US-PATENT-4,262,198] c 74 N83-19597
- Integrating IR detector imaging systems  
[NASA-CASE-NPO-15805-1] c 74 N84-28590
- Integrated photo-responsive metal oxide semiconductor circuit  
[NASA-CASE-GSC-12782-1] c 33 N88-14271
- Field induced gap infrared detector  
[NASA-CASE-NPO-17526-1-CU] c 35 N89-28796
- Laterally stacked Schottky diodes for infrared sensor applications  
[NASA-CASE-NPO-17426-1-CU] c 33 N90-10329
- INFRARED INSTRUMENTS**
- Infrared scanner Patent  
[NASA-CASE-XLA-00120] c 21 N70-33181
- Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NAS 1.71:NPO-15494-2] c 35 N85-34373
- INFRARED INTERFEROMETERS**
- Over-under double-pass interferometer  
[NASA-CASE-NPO-13999-1] c 35 N78-18395
- INFRARED LASERS**
- Monitoring atmospheric pollutants with a heterodyne radiometer transmitter-receiver  
[NASA-CASE-NPO-11919-1] c 35 N74-11284
- Gregorian all-reflective optical system  
[NASA-CASE-GSC-12058-1] c 74 N77-26942
- Thermal compensator for closed-cycle helium refrigerator — assuring constant temperature for an infrared laser diode  
[NASA-CASE-GSC-12168-1] c 31 N79-17029
- INFRARED PHOTOMETRY**
- Tailorable infrared sensing device with strain layer superlattice structure  
[NASA-CASE-NPO-16607-1-CU] c 76 N88-14836
- Tailorable infrared sensing device with strain layer superlattice structure  
[NASA-CASE-NPO-16617-2-CU] c 35 N90-17118
- INFRARED RADIATION**
- High-speed infrared furnace  
[NASA-CASE-XLE-10466] c 17 N69-25147
- High field CdS detector for infrared radiation  
[NASA-CASE-LAR-11027-1] c 35 N74-18088
- Double photon excitation of high-Rydberg atoms as a long-lived submillimeter detector  
[NASA-CASE-NPO-16372-1] c 72 N86-33127
- INFRARED REFLECTION**
- Electromagnetic radiation energy arrangement — coatings for solar energy absorption and infrared reflection  
[NASA-CASE-WOO-00428-1] c 32 N79-19186
- INFRARED SCANNERS**
- Infrared scanner Patent  
[NASA-CASE-XLA-00120] c 21 N70-33181
- Infrared horizon locator  
[NASA-CASE-LAR-10726-1] c 14 N73-20475
- INFRARED SPECTRA**
- Diatomic infrared gasdynamic laser — for producing different wavelengths  
[NASA-CASE-ARC-10370-1] c 36 N75-31426
- Gas particle radiator  
[NASA-CASE-LEW-14297-1] c 35 N89-12048
- INFRARED SPECTROMETERS**
- Telespectrograph Patent  
[NASA-CASE-XLA-03273] c 14 N71-18699
- Cooled echelle grating spectrometer — for space telescope applications  
[NASA-CASE-NPO-14372-1] c 35 N80-26635
- INFRARED SPECTROSCOPY**
- Apparatus for providing a servo drive signal in a high-speed stepping interferometer  
[NASA-CASE-NPO-13569-2] c 35 N79-14348
- INFRARED TELESCOPES**
- Optical system with reflective baffles  
[NASA-CASE-ARC-11502-1] c 74 N86-20125
- INFRASONIC FREQUENCIES**
- Resonant infrasonic gauging apparatus  
[NASA-CASE-MSC-11847-1] c 14 N72-11363
- INHIBITORS**
- Inhibited solid propellant composition containing beryllium hydride  
[NASA-CASE-NPO-10866-1] c 28 N79-14228
- INITIATORS (EXPLOSIVES)**
- Missile stage separation indicator and stage initiator Patent  
[NASA-CASE-XLA-00791] c 03 N70-39930
- Safe-arm initiator Patent  
[NASA-CASE-LAR-10372] c 09 N71-18599
- Electroexplosive device  
[NASA-CASE-NPO-13858-1] c 28 N79-11231
- Four-terminal electrical testing device — initiator bridgewire resistance  
[NASA-CASE-MSC-21166-1] c 35 N87-25555
- INJECTION**
- Thickness measuring and injection device Patent  
[NASA-CASE-MFS-20261] c 14 N71-27005
- High performance channel injection sealant invention abstract  
[NASA-CASE-ARC-14408-1] c 27 N82-33523
- INJECTION LASERS**
- Arrangement for damping the resonance in a laser diode  
[NASA-CASE-NPO-15980-1] c 36 N85-30305



## INJECTORS

- Rocket propellant injector Patent  
[NASA-CASE-XLE-00103] c 28 N70-33241
- Rocket engine injector Patent  
[NASA-CASE-XLE-00111] c 28 N70-38199
- Injector for bipropellant rocket engines Patent  
[NASA-CASE-XMF-00148] c 28 N70-38710
- Dust particle injector for hypervelocity accelerators Patent  
[NASA-CASE-XGS-06628] c 24 N71-16213
- Control valve and co-axial variable injector Patent  
[NASA-CASE-XNP-09702] c 15 N71-17654
- Rocket engine injector Patent  
[NASA-CASE-XLE-03157] c 28 N71-24736
- Bipropellant injector  
[NASA-CASE-XNP-09461] c 28 N72-23809
- Coaxial injector for reaction motors  
[NASA-CASE-NPO-11095] c 15 N72-25455
- Injector for use in high voltage isolators for liquid feed lines  
[NASA-CASE-NPO-11377] c 15 N73-27406
- Rocket injector head  
[NASA-CASE-XMF-04592-1] c 20 N79-21125
- Extended temperature range rocket injector  
[NASA-CASE-LEW-14846-1] c 20 N90-15130

## INKS

- Multicolor printing plate joining  
[NASA-CASE-LEW-13598-1] c 35 N84-22930

## INLET FLOW

- High pressure four-way valve Patent  
[NASA-CASE-XNP-00214] c 15 N70-36908
- Gas turbine combustor Patent  
[NASA-CASE-LEW-10286-1] c 28 N71-28915
- Airflow control system for supersonic inlets  
[NASA-CASE-LEW-11188-1] c 02 N74-20646
- Variably positioned guide vanes for aerodynamic choking  
[NASA-CASE-LAR-10642-1] c 07 N74-31270
- Shock position sensor for supersonic inlets --- measuring pressure in the throat of a supersonic inlet  
[NASA-CASE-LEW-11915-1] c 35 N76-14431
- Method for fabricating a mass spectrometer inlet leak  
[NASA-CASE-GSC-12077-1] c 35 N77-24455
- Gas turbine engine with recirculating bleed  
[NASA-CASE-LEW-12452-1] c 07 N78-25089
- Self stabilizing sonic inlet  
[NASA-CASE-LEW-11890-1] c 05 N79-24976

## INLET NOZZLES

- Rocket injector head  
[NASA-CASE-XMF-04592-1] c 20 N79-21125

## INLET PRESSURE

- Fluid jet amplifier  
[NASA-CASE-XLE-03512] c 12 N69-21466
- Shock position sensor for supersonic inlets --- measuring pressure in the throat of a supersonic inlet  
[NASA-CASE-LEW-11915-1] c 35 N76-14431

## INOCULATION

- Automatic inoculating apparatus --- includes movable carriage, drive motor, and swabbing motor  
[NASA-CASE-LAR-11074-1] c 51 N75-13502

## INORGANIC COATINGS

- Diffuse reflective coating  
[NASA-CASE-GSC-11214-1] c 06 N73-13128
- Boron trifluoride coatings for thermoplastic materials and method of applying same in glow discharge  
[NASA-CASE-ARC-11057-1] c 27 N78-31233

## INORGANIC COMPOUNDS

- Method of making membranes  
[NASA-CASE-XNP-04264] c 03 N69-21337
- Inorganic solid film lubricants Patent  
[NASA-CASE-XMF-03988] c 15 N71-21403
- Modified polyurethane foams for fuel-fire Patent  
[NASA-CASE-ARC-10098-1] c 06 N71-24739
- Inorganic thermal control coatings  
[NASA-CASE-MFS-20011] c 18 N72-22566
- Inorganic-organic separators for alkaline batteries  
[NASA-CASE-LEW-12649-1] c 44 N78-25530
- Method for the preparation of inorganic single crystal and polycrystalline electronic materials  
[NASA-CASE-XLE-02545-1] c 76 N79-21910

## INORGANIC PEROXIDES

- Process for preparing higher oxides of the alkali and alkaline earth metals  
[NASA-CASE-ARC-10992-1] c 26 N78-32229
- Process for the preparation of calcium superoxide  
[NASA-CASE-ARC-11053-1] c 25 N79-10162

## INPUT

- Remodulator filter Patent  
[NASA-CASE-NPO-10198] c 09 N71-24806
- Active RC networks  
[NASA-CASE-ARC-10020] c 10 N72-17172
- High-speed multiplexing of keyboard data inputs  
[NASA-CASE-NPO-14554-1] c 60 N81-27814

## INPUT/OUTPUT ROUTINES

- Analog to digital converter  
[NASA-CASE-NPO-13385-1] c 33 N76-18345

## INSERTION

- Apparatus and method of inserting a microelectrode in body tissue or the like using vibration means  
[NASA-CASE-NPO-13910-1] c 52 N79-27836

## INSERTION LOSS

- Insertion loss measuring apparatus having transformer means connected across a pair of bolometers Patent  
[NASA-CASE-XNP-01193] c 10 N71-16057

## INSERTS

- Method of repairing hidden leaks in tubes  
[NASA-CASE-MFS-19796-1] c 37 N86-32736
- Turbomachinery shaft insert  
[NASA-CASE-MFS-28345-2] c 37 N89-28842

## INSPECTION

- Automatic visual inspection system for microelectronics  
[NASA-CASE-NPO-13282] c 38 N78-17396
- Method for refurbishing and processing parachutes  
[NASA-CASE-KSC-11042-1] c 09 N82-29330
- Apparatus and method for inspecting a bearing ball  
[NASA-CASE-MFS-25833-1] c 35 N86-32698
- Method of radiographic inspection of wooden members  
[NASA-CASE-LAR-13724-1] c 38 N90-23756

## INSTALLING

- Device for installing rocket engines  
[NASA-CASE-MFS-19220-1] c 20 N76-22296
- Thermocouple installation  
[NASA-CASE-NPO-13540-1] c 35 N77-14409
- A method and technique for installing light-weight fragile, high-temperature fiber insulation  
[NASA-CASE-MSC-18934-3] c 24 N82-26387
- Inflatable device for installing strain gage bridges  
[NASA-CASE-FRC-11068-1] c 35 N84-12443

## INSTRUMENT COMPENSATION

- Compensation for primary reflector wavefront error  
[NASA-CASE-NPO-16869-1CU] c 74 N86-33138

## INSTRUMENT ERRORS

- Radiation direction detector including means for compensating for photocell aging Patent  
[NASA-CASE-XLA-00183] c 14 N70-40239

## INSTRUMENT FLIGHT RULES

- Controlled visibility device for an aircraft Patent  
[NASA-CASE-XFR-04147] c 11 N71-10748

## INSTRUMENT ORIENTATION

- Plurality of photosensitive cells on a pyramidal base for planetary trackers  
[NASA-CASE-XNP-04180] c 07 N69-39736
- Azimuth laying system Patent  
[NASA-CASE-XMF-01689] c 21 N71-23289
- Optical machine tool alignment indicator Patent  
[NASA-CASE-XAC-09489-1] c 15 N71-26673
- Solar energy powered heliotrope  
[NASA-CASE-GSC-10945-1] c 21 N72-31637

## INSTRUMENT PACKAGES

- Apparatus for ejection of an instrument cover  
[NASA-CASE-XMF-04132] c 15 N69-27502
- Method and apparatus for shock protection Patent  
[NASA-CASE-XLA-00482] c 15 N70-36409
- Foam generator Patent  
[NASA-CASE-XLA-00838] c 03 N70-36778
- Velocity package Patent  
[NASA-CASE-XLA-01339] c 31 N71-15692
- Processing for producing a sterilized instrument Patent  
[NASA-CASE-XNP-09763] c 14 N71-20461
- Thermal control canister  
[NASA-CASE-GSC-12253-1] c 34 N79-31523

## INSTRUMENTS

- Radio frequency shielded enclosure Patent  
[NASA-CASE-XMF-09422] c 07 N71-19436
- Linear differential pressure sensor Patent  
[NASA-CASE-XMF-01974] c 14 N71-22752
- Precision thrust gage Patent  
[NASA-CASE-XGS-02319] c 14 N71-22965
- Self-calibrating displacement transducer Patent  
[NASA-CASE-XLA-00781] c 09 N71-22999
- Sensing probe  
[NASA-CASE-LEW-10281-1] c 14 N72-17327
- Scientific experiment flexible mount  
[NASA-CASE-MSC-12372-1] c 31 N72-25842
- Magnetic suspension and pointing system  
[NASA-CASE-LAR-11889-2] c 37 N78-27424
- Rotary leveling base platform  
[NASA-CASE-ARC-10981-1] c 37 N78-27425

## INSULATED STRUCTURES

- Piping arrangement through a double chamber structure  
[NASA-CASE-XNP-08882] c 15 N69-39935

## INSULATION

- Electrode construction Patent  
[NASA-CASE-ARC-10043-1] c 05 N71-11193
- Foamed in place ceramic refractory insulating material Patent  
[NASA-CASE-XGS-02435] c 18 N71-22998

## Method of removing insulated material from insulated wires

- [NASA-CASE-FRC-10038] c 15 N72-20444
- Inductance device with vacuum insulation  
[NASA-CASE-LEW-10330-1] c 09 N72-27226
- Insulated electrocardiographic electrodes --- without paste electrolyte  
[NASA-CASE-MSC-14339-1] c 05 N75-24716
- Silica reusable surface insulation  
[NASA-CASE-ARC-10721-1] c 27 N76-22376
- Two-component ceramic coating for silica insulation  
[NASA-CASE-MSC-14270-1] c 27 N76-22377
- Three-component ceramic coating for silica insulation  
[NASA-CASE-MSC-14270-2] c 27 N76-23426
- Field effect transistor and method of construction thereof  
[NASA-CASE-MFS-23312-1] c 33 N78-27326
- Cork-resin ablative insulation for complex surfaces and method for applying the same  
[NASA-CASE-MFS-23626-1] c 24 N80-26388
- Impacting device for testing insulation  
[NASA-CASE-MFS-25862-2] c 37 N84-33807
- Cryogenic insulation system  
[NASA-CASE-LAR-13506-1] c 27 N89-12741
- Pressure rig for repetitive casting  
[NASA-CASE-LAR-14050-1] c 31 N90-21216
- High temperature insulation barrier composite  
[NASA-CASE-MFS-29241-1] c 24 N90-23480

## INSULATORS

- Electrostatic thruster with improved insulators Patent  
[NASA-CASE-XLE-01902] c 28 N71-10574
- High temperature resistant cermet and ceramic compositions --- for thermal resistant insulators and refractory coatings  
[NASA-CASE-NPO-13690-1] c 27 N78-19302
- Pyroelectric detector arrays  
[NASA-CASE-LAR-12363-2] c 33 N83-24763
- Process for lowering the dielectric constant of polyimides using diamine acid additives  
[NASA-CASE-LAR-13902-1] c 27 N90-23546

## INTAKE SYSTEMS

- Inlet deflector for jet engines Patent  
[NASA-CASE-XLE-00388] c 28 N70-34788
- The engine air intake system  
[NASA-CASE-ARC-10781-1] c 07 N77-18154
- Fluid sampling device  
[NASA-CASE-GSC-12143-1] c 35 N77-32456
- Passive propellant system  
[NASA-CASE-MFS-23642-1] c 20 N80-10278
- Reciprocating engines  
[NASA-CASE-MSC-16239-1] c 37 N81-32510
- Continuous laminar smoke generator  
[NASA-CASE-LAR-13014-1] c 09 N85-21178
- Solid sorbent air sampler  
[NASA-CASE-MSC-20653-1] c 35 N86-26595

## INTEGERS

- Boron-containing organosilane polymers and ceramic materials thereof  
[NASA-CASE-ARC-11649-2-SB] c 27 N90-21177

## INTEGRATED CIRCUITS

- Counter and shift register Patent  
[NASA-CASE-XNP-01753] c 08 N71-22897
- Pulse rise time and amplitude detector Patent  
[NASA-CASE-XMF-08804] c 09 N71-24717
- Method and apparatus for swept-frequency impedance measurements of welds  
[NASA-CASE-ARC-10176-1] c 15 N72-21464
- Integrated circuit including field effect transistor and cermet resistor  
[NASA-CASE-GSC-10835-1] c 09 N72-33205
- Derivation of a tangent function using an integrated circuit four-quadrant multiplier  
[NASA-CASE-MSC-13907-1] c 10 N73-26230
- Coaxial inverted geometry transistor having buried emitter  
[NASA-CASE-ARC-10330-1] c 09 N73-32112
- Integrated circuit package with lead structure and method of preparing the same  
[NASA-CASE-MFS-21374-1] c 33 N74-12951
- Integrated P-channel MOS gyrator  
[NASA-CASE-MFS-22343-1] c 33 N74-34638
- Four phase logic systems --- including integrated microcircuits  
[NASA-CASE-MSC-14240-1] c 33 N75-14957
- Integrable power gyrator --- with Z-matrix design using parallel transistors  
[NASA-CASE-MFS-22342-1] c 33 N75-30428
- Cross correlation anomaly detection system  
[NASA-CASE-NPO-13283] c 38 N78-17395
- Complementary DMOS-VMOS integrated circuit structure  
[NASA-CASE-GSC-12190-1] c 33 N79-12321
- Method for analyzing radiation sensitivity of integrated circuits  
[NASA-CASE-NPO-14350-1] c 33 N80-14332



Solar cell system having alternating current output  
[NASA-CASE-LEW-12806-2] c 44 N81-12542

Microwave integrated circuit for Josephson voltage standards  
[NASA-CASE-MFS-23845-1] c 33 N81-17348

Method for sequentially processing a multi-level interconnect circuit in a vacuum chamber  
[NASA-CASE-MFS-256704-1] c 33 N84-22884

Split-cross-bridge resistor for testing for proper fabrication of integrated circuits  
[NASA-CASE-NPO-16021-1] c 33 N85-30187

Cross-contact chain  
[NASA-CASE-NPO-16784-1] c 33 N87-10231

Method of examining microcircuit patterns  
[NASA-CASE-NPO-16289-1] c 33 N87-14594

Ion beam sputter etching  
[NASA-CASE-LEW-13899-1] c 31 N87-21160

Integrated photo-responsive metal oxide semiconductor circuit  
[NASA-CASE-GSC-12782-1] c 33 N88-14271

Integrated circuit reliability testing  
[NASA-CASE-NPO-17393-1-CU] c 33 N89-29679

Universal nondestructive MM-wave integrated circuit test fixture  
[NASA-CASE-LEW-14746-1] c 33 N90-17009

**INTEGRATORS**

Operational integrator Patent  
[NASA-CASE-NPO-10230] c 09 N71-12520

Variable duration pulse integrator Patent  
[NASA-CASE-XLA-01219] c 10 N71-23084

Variable width pulse integrator Patent  
[NASA-CASE-XLA-03356] c 10 N71-23315

Feedback integrator with grounded capacitor Patent  
[NASA-CASE-XAC-10607] c 10 N71-23669

High speed phase detector Patent  
[NASA-CASE-XNP-01306-2] c 09 N71-24596

Adaptive control system for line-commutated inverters  
[NASA-CASE-MFS-25209-1] c 33 N83-35227

**INTEGRITY**

Mechanical strain isolator mount  
[NASA-CASE-LAR-13580-1] c 37 N90-16272

**INTERFACES**

Geometries for roughness shapes in laminar flow  
[NASA-CASE-LAR-13255-1] c 02 N87-16793

Expandable pallet for space station interface attachments  
[NASA-CASE-MSC-21117-1] c 18 N88-28958

Laser Doppler velocimeter multiplexer interface for simultaneous measured events  
[NASA-CASE-ARC-11536-1] c 33 N89-14384

Space module assembly apparatus with docking alignment flexibility and restraint  
[NASA-CASE-MSC-21211-1] c 18 N89-28553

Expandable pallet for space station interface attachments  
[NASA-CASE-MSC-21117-2] c 18 N89-28554

High temperature, flexible, thermal barrier seal  
[NASA-CASE-LEW-14672-1] c 37 N90-15444

**INTERFACIAL TENSION**

Passive propellant system  
[NASA-CASE-MFS-23642-1] c 20 N80-10278

Sphere forming method and apparatus  
[NASA-CASE-NPO-15070-1] c 31 N83-35176

Surface tension confined liquid cryogen cooler  
[NASA-CASE-GSC-13112-1] c 31 N89-29578

Convergent strand array liquid pumping system  
[NASA-CASE-NPO-17301-1-CU] c 31 N90-23587

**INTERFERENCE FIT**

Cryogenic anti-friction bearing with inner race  
[NASA-CASE-MFS-28384-1] c 37 N90-27112

**INTERFEROMETERS**

Apparatus for controlling the velocity of an electromechanical drive for interferometers and the like Patent  
[NASA-CASE-XGS-03532] c 14 N71-17627

Incremental motion drive system Patent  
[NASA-CASE-XNP-08897] c 15 N71-17694

Laser grating interferometer Patent  
[NASA-CASE-XLA-04295] c 16 N71-24170

Fringe counter for interferometers Patent  
[NASA-CASE-LAR-10204] c 14 N71-27215

Interferometer-polarimeter  
[NASA-CASE-NPO-11239] c 14 N73-12446

Interferometric rotation sensor  
[NASA-CASE-ARC-10278-1] c 14 N73-25463

High resolution Fourier interferometer-spectrophotopolarimeter  
[NASA-CASE-NPO-13604-1] c 35 N76-31490

Apparatus for providing a servo drive signal in a high-speed stepping interferometer  
[NASA-CASE-NPO-13569-2] c 35 N79-14348

Velocity servo for continuous scan Fourier interference spectrometer  
[NASA-CASE-NPO-14093-1] c 35 N80-20563

Interferometer  
[NASA-CASE-NPO-14502-1] c 74 N81-17888

Interferometer — high resolution  
[NASA-CASE-NPO-14448-1] c 74 N81-29963

Optical gyroscope system  
[NASA-CASE-NPO-14258-1] c 35 N81-33448

Dual-beam skin friction interferometer  
[NASA-CASE-ARC-11354-1] c 74 N83-21949

Interferometric angle monitor  
[NASA-CASE-GSC-12614-1] c 74 N83-32577

Low noise lead screw positioner  
[NASA-CASE-NPO-15617-1] c 35 N87-21304

Fiber optic sensing system  
[NASA-CASE-LEW-14795-1] c 74 N90-15733

Equal path, phase shifting, sample point interferometer for monitoring the configuration of surfaces  
[NASA-CASE-NPO-17913-1-CU] c 74 N90-27488

**INTERFEROMETRY**

Surface roughness measuring system — synthetic aperture radar measurements of ocean wave height and terrain peaks  
[NASA-CASE-NPO-13862-1] c 35 N79-10391

Interferometric locating system  
[NASA-CASE-NPO-14173-1] c 04 N80-32359

Dual differential interferometer  
[NASA-CASE-LAR-12966-1] c 35 N85-30282

Ranging system which compares an object reflected component of a light beam to a reference component of the light beam  
[NASA-CASE-NPO-15865-1] c 74 N85-34629

Equal path, phase shifting, sample point interferometer for monitoring the configuration of surfaces  
[NASA-CASE-NPO-17913-1-CU] c 74 N90-27488

**INTERLAYERS**

Method of making a partial interlaminar separation composite system  
[NASA-CASE-LAR-12065-2] c 24 N81-33235

**INTERMEDIATE FREQUENCY AMPLIFIERS**

Multichannel logarithmic RF level detector  
[NASA-CASE-LAR-11021-1] c 32 N76-14321

**INTERMETALLICS**

Twisted multifilament superconductor  
[NASA-CASE-LEW-11726-1] c 26 N73-26752

Synthesis of superconducting compounds by explosive compaction of powders  
[NASA-CASE-MFS-20861-1] c 18 N73-32437

Oxidation resistant slurry coating for carbon-based materials  
[NASA-CASE-LEW-13923-1] c 26 N85-35267

Nickel base coating alloy  
[NASA-CASE-LEW-13834-1] c 26 N87-14482

**INTERNAL COMBUSTION ENGINES**

Fuel injection pump for internal combustion engines Patent  
[NASA-CASE-MSC-12139-1] c 28 N71-14058

Continuous detonation reaction engine Patent  
[NASA-CASE-XMF-06926] c 28 N71-22983

System for preconditioning a combustible vapor  
[NASA-CASE-NPO-12072] c 28 N72-22772

System for minimizing internal combustion engine pollution emission  
[NASA-CASE-NPO-13402-1] c 37 N76-18457

Combustion engine — for air pollution control  
[NASA-CASE-NPO-13671-1] c 37 N77-31497

Hydrogen-fueled engine  
[NASA-CASE-NPO-13763-1] c 44 N78-33526

Plasma igniter for internal combustion engine  
[NASA-CASE-NPO-13828-1] c 37 N79-11405

Indicated mean-effective pressure instrument  
[NASA-CASE-LEW-12661-1] c 35 N79-14345

Start up system for hydrogen generator used with an internal combustion engine  
[NASA-CASE-NPO-13849-1] c 28 N80-10374

Supercritical fuel injection system  
[NASA-CASE-LEW-12990-1] c 07 N81-29129

Automatic compression adjusting mechanism for internal combustion engines  
[NASA-CASE-MSC-18807-1] c 37 N83-36483

Real time pressure signal system for a rotary engine  
[NASA-CASE-LEW-13622-1] c 07 N84-22559

Composite piston  
[NASA-CASE-LAR-13435-1] c 37 N88-23981

Lightweight piston architecture  
[NASA-CASE-LAR-13926-1] c 37 N90-22042

**INTERPLANETARY SPACE**

Heat shield Patent  
[NASA-CASE-XMS-00486] c 33 N70-33344

RC networks and amplifiers employing the same  
[NASA-CASE-XAC-05462-2] c 10 N72-17171

**INTERPLANETARY SPACECRAFT**

Transpirationally cooled heat ablation system Patent  
[NASA-CASE-XMS-02677] c 31 N70-42075

**INTERPLANETARY TRAJECTORIES**

Means for visually indicating flight paths of vehicles between the Earth, Venus, and Mercury Patent  
[NASA-CASE-XNP-00708] c 14 N70-35394

**INTERVALS**

Apparatus for using a time interval counter to measure frequency stability  
[NASA-CASE-NPO-17325-1-CU] c 32 N90-17005

**INTRACRANIAL PRESSURE**

Induction powered biological radiosonde  
[NASA-CASE-ARC-11120-1] c 52 N80-18691

**INTRAOCULAR PRESSURE**

Intra-ocular pressure normalization technique and equipment  
[NASA-CASE-LEW-12955-1] c 52 N80-14684

Intra-ocular pressure normalization technique and equipment  
[NASA-CASE-LEW-12723-1] c 52 N80-18690

**INTRAVEHICULAR ACTIVITY**

Space suit  
[NASA-CASE-MSC-12609-1] c 05 N73-32012

**INTRAVENOUS PROCEDURES**

Bio-medical flow sensor — intravenous procedures  
[NASA-CASE-MSC-18761-1] c 52 N83-27577

**INTRUSION**

Passive intrusion detection system  
[NASA-CASE-NPO-13804-1] c 33 N80-23559

**INVENTIONS**

Active notch filter network with variable notch depth, width and frequency  
[NASA-CASE-FRC-11055-1] c 33 N80-29583

Ion-exchange hollow fibers  
[NASA-CASE-NPO-13309-1] c 25 N81-19244

**INVERTED CONVERTERS (DC TO AC)**

Inverter ratio failure detector  
[NASA-CASE-NPO-13160-1] c 35 N74-18090

Variable frequency inverter for ac induction motors with torque, speed and braking control  
[NASA-CASE-MFS-22088-1] c 33 N75-15874

Solar cell system having alternating current output  
[NASA-CASE-LEW-12806-2] c 44 N81-12542

Power converter  
[NASA-CASE-FRC-11014-1] c 33 N82-18494

**INVERTERS**

Transient-compensated SCR inverter  
[NASA-CASE-XLA-08507] c 09 N69-39984

Inverter oscillator with voltage feedback  
[NASA-CASE-NPO-10760] c 09 N72-25254

Overload protection system for power inverter  
[NASA-CASE-NPO-13872-1] c 33 N78-10377

Module failure isolation circuit for paralleled inverters — preventing system failure during power conditioning for spacecraft applications  
[NASA-CASE-NPO-14000-1] c 33 N79-24254

Base drive for paralleled inverter systems  
[NASA-CASE-NPO-14163-1] c 33 N81-14220

Adaptive reference voltage generator for firing angle control of line-commutated inverters  
[NASA-CASE-MFS-25215-1] c 33 N83-31953

Adaptive control system for line-commutated inverters  
[NASA-CASE-MFS-25209-1] c 33 N83-35227

**INVESTIGATION**

Method for investigating the formation of crystals in a transparent material  
[NASA-CASE-MFS-26008-1-CU] c 76 N88-14835

**IODINE**

Method of using photovoltaic cell using poly-N-vinylcarbazole complex Patent  
[NASA-CASE-NPO-10373] c 03 N71-18698

Simple method of making photovoltaic junctions Patent  
[NASA-CASE-XNP-01960] c 09 N71-23027

Iodine generator for reclaimed water purification  
[NASA-CASE-MSC-14632-1] c 54 N78-14784

**IODINE COMPOUNDS**

Perfluoroalkyl polytriazines containing pendent iododifluoromethyl groups  
[NASA-CASE-ARC-11241-1] c 25 N81-14016

**IODINE ISOTOPES**

Production of high purity I-123  
[NASA-CASE-LEW-10518-1] c 24 N72-33681

Method of producing I-123 — by bombardment of cesium causing spallation  
[NASA-CASE-LEW-11390-2] c 25 N76-27383

Production of I-123  
[NASA-CASE-LEW-11390-3] c 25 N76-29379

**ION ACCELERATORS**

Process for glass coating an ion accelerator grid Patent  
[NASA-CASE-LEW-10278-1] c 15 N71-28582

Ion beam accelerator system  
[NASA-CASE-NPO-15547-1] c 72 N84-16959

**ION BEAMS**

Ion beam deflector Patent  
[NASA-CASE-LEW-10689-1] c 28 N71-26173

Dispensing targets for ion beam particle generators  
[NASA-CASE-NPO-13112-1] c 73 N74-26767

Sputtering holes with ion beamlets  
[NASA-CASE-LEW-11646-1] c 20 N74-31269

- Method of constructing dished ion thruster grids to provide hole array spacing compensation  
[NASA-CASE-LEW-11876-1] c 20 N76-21276
- Ion beam thruster shield  
[NASA-CASE-LEW-12082-1] c 20 N77-10148
- Targets for producing high purity I-123  
[NASA-CASE-LEW-10518-3] c 25 N78-27226
- Method of cold welding using ion beam technology  
[NASA-CASE-LEW-12982-1] c 37 N81-19455
- Ion beam accelerator system  
[NASA-CASE-NPO-15547-1] c 72 N84-16959
- Method of making an ion beam sputter-etched ventricular catheter for hydrocephalus shunt  
[NASA-CASE-LEW-13107-2] c 52 N84-23095
- Ion sputter textured graphite electrode plates  
[NASA-CASE-LEW-12919-2] c 70 N84-28565
- Deposition of diamondlike carbon films  
[NASA-CASE-LEW-14080-1] c 31 N85-20153
- Diamondlike flakes  
[NASA-CASE-LEW-13837-2] c 24 N85-21267
- Heat exchanger for electrothermal devices  
[NASA-CASE-LEW-14037-1] c 20 N87-16875
- Ion beam sputter etching  
[NASA-CASE-LEW-13899-1] c 31 N87-21160
- Generation of intense negative ion beams  
[NASA-CASE-NPO-16061-1-CU] c 72 N87-21660
- Ion-beam nitriding of steels  
[NASA-CASE-LEW-14104-2] c 26 N88-14179
- Trochoidal analysis of scattered electrons in a merged electron-ion beam geometry  
[NASA-CASE-NPO-16789-1-CU] c 72 N89-29169
- ION CHARGE**  
Quadrupole mass filter with means to generate a noise spectrum exclusive of the resonant frequency of the desired ions to deflect stable ions  
[NASA-CASE-XNP-04231] c 14 N73-32325
- ION CONCENTRATION**  
Deposition of alloy films — on irregularly shaped metal object  
[NASA-CASE-LEW-11262-1] c 27 N74-13270
- ION CURRENTS**  
System for monitoring the presence of neutrals in a stream of ions Patent  
[NASA-CASE-XNP-02592] c 24 N71-20518
- ION CYCLOTRON RADIATION**  
Ion and electron detector for use in an ICR spectrometer  
[NASA-CASE-NPO-13479-1] c 35 N77-10492
- ION DENSITY (CONCENTRATION)**  
Method and apparatus for measurement of trap density and energy distribution in dielectric films  
[NASA-CASE-NPO-13443-1] c 76 N76-20994
- ION ENGINES**  
Ion thruster cathode  
[NASA-CASE-XLE-07087] c 06 N69-39889
- High-vacuum condenser tank for ion rocket tests Patent  
[NASA-CASE-XLE-00168] c 11 N70-33278
- Ion thruster cathode Patent Application  
[NASA-CASE-LEW-10814-1] c 28 N70-35422
- Ion rocket Patent  
[NASA-CASE-XLE-00376] c 28 N70-37245
- Rocket engine Patent  
[NASA-CASE-XLE-00342] c 28 N70-37980
- Thrust dynamometer Patent  
[NASA-CASE-XLE-00702] c 14 N70-40203
- Apparatus for increasing ion engine beam density Patent  
[NASA-CASE-XLE-00519] c 28 N70-41576
- Double optic system for ion engine Patent  
[NASA-CASE-XNP-02839] c 28 N70-41922
- Electrostatic ion engine having a permanent magnetic circuit Patent  
[NASA-CASE-XLE-01124] c 28 N71-14043
- Electrostatic ion rocket engine Patent  
[NASA-CASE-XLE-02066] c 28 N71-15661
- System for monitoring the presence of neutrals in a stream of ions Patent  
[NASA-CASE-XNP-02592] c 24 N71-20518
- Construction and method of arranging a plurality of ion engines to form a cluster Patent  
[NASA-CASE-XNP-02923] c 28 N71-23081
- Electronic cathode having a brush-like structure and a relatively thick oxide emissive coating Patent  
[NASA-CASE-XLE-04501] c 09 N71-23190
- Ion engine casing construction and method of making same Patent  
[NASA-CASE-XNP-06942] c 28 N71-23293
- Ion thruster accelerator system Patent  
[NASA-CASE-LEW-10106-1] c 28 N71-26642
- Propellant feed isolator Patent  
[NASA-CASE-LEW-10210-1] c 28 N71-26781
- High efficiency ionizer assembly Patent  
[NASA-CASE-XNP-01954] c 28 N71-28850
- Feed system for an ion thruster  
[NASA-CASE-NPO-10737] c 28 N72-11709
- Ion thruster with a combination keeper electrode and electron baffle  
[NASA-CASE-NPO-11880] c 28 N73-24783
- Single grid accelerator for an ion thruster  
[NASA-CASE-XLE-10453-2] c 28 N73-27699
- Method of making dished ion thruster grids  
[NASA-CASE-LEW-11694-1] c 20 N75-18310
- Method of constructing dished ion thruster grids to provide hole array spacing compensation  
[NASA-CASE-LEW-11876-1] c 20 N76-21276
- Precision tunable resonant microwave cavity  
[NASA-CASE-LEW-13935-1] c 33 N87-21234
- ION EXCHANGE MEMBRANE ELECTROLYTES**  
Method of making membranes  
[NASA-CASE-XNP-04264] c 03 N69-21337
- Ion-exchange membrane with platinum electrode assembly Patent  
[NASA-CASE-XMS-02063] c 03 N71-29044
- Formulated plastic separators for soluble electrode cells — rubber-ion transport membranes  
[NASA-CASE-LEW-12358-1] c 44 N79-17313
- Insoluble polyelectrolyte and ion-exchange hollow fiber impregnated therewith  
[NASA-CASE-NPO-13530-1] c 25 N81-17187
- Method of making formulated plastic separators for soluble electrode cells  
[NASA-CASE-LEW-12358-2] c 25 N82-21268
- Method and apparatus for rebalancing a REDOX flow cell system  
[NASA-CASE-LEW-14127-1] c 33 N86-20680
- ION EXCHANGE RESINS**  
Inorganic-organic separators for alkaline batteries  
[NASA-CASE-LEW-12649-1] c 44 N78-25530
- Dialysis system — using ion exchange resin membranes permeable to urea molecules  
[NASA-CASE-NPO-14101-1] c 52 N80-14687
- Membrane consisting of polyquaternary amine ion exchange polymer network interpenetrating the chains of thermoplastic matrix polymer  
[NASA-CASE-NPO-14001-1] c 27 N81-14076
- ION EXCHANGING**  
Membrane consisting of polyquaternary amine ion exchange polymer network interpenetrating the chains of thermoplastic matrix polymer  
[NASA-CASE-NPO-14001-1] c 27 N81-14076
- Ion-exchange hollow fibers  
[NASA-CASE-NPO-13309-1] c 25 N81-19244
- ION EXTRACTION**  
Apparatus for extraction and separation of a preferentially photo-dissociated molecular isotope into positive and negative ions by means of an electric field  
[NASA-CASE-LEW-12465-1] c 25 N78-25148
- Ion beam accelerator system  
[NASA-CASE-NPO-15547-1] c 72 N84-16959
- Ion generator and ion application system  
[NASA-CASE-MFS-28122-1] c 72 N88-24253
- ION IMPLANTATION**  
Method of making V-MOS field effect transistors utilizing a two-step anisotropic etching and ion implantation  
[NASA-CASE-GSC-12515-1] c 33 N81-26360
- ION IRRADIATION**  
Modification of the electrical and optical properties of polymers — ion irradiation to create texture  
[NASA-CASE-LEW-13027-1] c 27 N80-24437
- Ion-beam nitriding of steels  
[NASA-CASE-LEW-14104-2] c 26 N88-14179
- ION MOTION**  
Ion mass spectrometer  
[NASA-CASE-NPO-15423-1] c 35 N84-28016
- ION PLATING**  
Catalyst surfaces for the chromous/chromic redox couple  
[NASA-CASE-LEW-13148-2] c 44 N81-29524
- Diamondlike flake composites  
[NASA-CASE-LEW-13837-1] c 24 N84-22695
- ION PROBES**  
Ion microprobe mass spectrometer for analyzing fluid materials Patent  
[NASA-CASE-ERC-10014] c 14 N71-28863
- ION PROPULSION**  
Variable thrust ion engine utilizing thermally decomposable solid fuel Patent  
[NASA-CASE-XMF-00923] c 28 N70-36802
- Ion rocket Patent  
[NASA-CASE-XLE-00376] c 28 N70-37245
- Rocket engine Patent  
[NASA-CASE-XLE-00342] c 28 N70-37980
- Method of producing porous tungsten ionizers for ion rocket engines Patent  
[NASA-CASE-XLE-00455] c 28 N70-38197
- Double optic system for ion engine Patent  
[NASA-CASE-XNP-02839] c 28 N70-41922
- Electron bombardment ion engine Patent  
[NASA-CASE-XNP-04124] c 28 N71-21822
- Ion beam deflector Patent  
[NASA-CASE-LEW-10689-1] c 28 N71-26173
- Ion thruster accelerator system Patent  
[NASA-CASE-LEW-10106-1] c 28 N71-26642
- Feed system for an ion thruster  
[NASA-CASE-NPO-10737] c 28 N72-11709
- Ion thruster  
[NASA-CASE-LEW-10770-1] c 28 N72-22770
- Ion thruster magnetic field control  
[NASA-CASE-LEW-10835-1] c 28 N72-22771
- Method of making dished ion thruster grids  
[NASA-CASE-LEW-11694-1] c 20 N75-18310
- Apparatus for forming dished ion thruster grids  
[NASA-CASE-LEW-11694-2] c 37 N76-14461
- Anode for ion thruster  
[NASA-CASE-LEW-12048-1] c 20 N77-20162
- Closed Loop solar array-ion thruster system with power control circuitry  
[NASA-CASE-LEW-12780-1] c 20 N79-20179
- A dc to dc converter  
[NASA-CASE-MFS-25430-1] c 33 N84-16453
- Ring-cusp ion thruster with shell anode  
[NASA-CASE-LEW-13881-1] c 20 N85-21256
- ION PUMPS**  
Mass spectrometer with magnetic pole pieces providing the magnetic fields for both the magnetic sector and an ion-type vacuum pump  
[NASA-CASE-NPO-13663-1] c 35 N77-14406
- ION SOURCES**  
Focussing system for an ion source having apertured electrodes Patent  
[NASA-CASE-XNP-03332] c 09 N71-10618
- Multilayer porous ionizer Patent  
[NASA-CASE-XNP-04338] c 17 N71-23046
- Ion thruster accelerator system Patent  
[NASA-CASE-LEW-10106-1] c 28 N71-26642
- High efficiency ionizer assembly Patent  
[NASA-CASE-XNP-01954] c 28 N71-28850
- Apparatus for ionization analysis  
[NASA-CASE-ARC-10017-1] c 14 N72-29464
- Sputtering holes with ion beamlets  
[NASA-CASE-LEW-11646-1] c 20 N74-31269
- Multitarget sequential sputtering apparatus  
[NASA-CASE-NPO-13345-1] c 37 N75-19684
- Miniature cyclotron resonance ion source using small permanent magnet  
[NASA-CASE-NPO-14324-1] c 72 N80-27163
- Hydrogen hollow cathode ion source  
[NASA-CASE-LEW-12840-1] c 72 N80-33186
- ION TRAPS (INSTRUMENTATION)**  
Method and apparatus for measurement of trap density and energy distribution in dielectric films  
[NASA-CASE-NPO-13443-1] c 76 N76-20994
- IONIC MOBILITY**  
Solid electrolyte cell  
[NASA-CASE-NPO-15269-1] c 44 N82-29710
- IONIZATION**  
Ion generator and ion application system  
[NASA-CASE-MFS-28122-1] c 72 N88-24253
- Alternating gradient photodetector  
[NASA-CASE-NPO-17235-1-CU] c 35 N90-21358
- IONIZATION CHAMBERS**  
Baseline stabilization system for ionization detector Patent  
[NASA-CASE-XNP-03128] c 10 N70-41891
- Electron bombardment ion engine Patent  
[NASA-CASE-XNP-04124] c 28 N71-21822
- A multichannel photoionization chamber for absorption analysis Patent  
[NASA-CASE-ERC-10044-1] c 14 N71-27090
- Apparatus for ionization analysis  
[NASA-CASE-ARC-10017-1] c 14 N72-29464
- IONIZATION CROSS SECTIONS**  
Trochoidal analysis of scattered electrons in a merged electron-ion beam geometry  
[NASA-CASE-NPO-16789-1-CU] c 72 N89-29169
- IONIZATION GAGES**  
Ionization vacuum gauge Patent  
[NASA-CASE-XNP-00646] c 14 N70-35666
- Pressure monitoring with a plurality of ionization gauges controlled at a central location Patent  
[NASA-CASE-XLE-00787] c 14 N71-21090
- Apparatus for ionization analysis  
[NASA-CASE-ARC-10017-1] c 14 N72-29464
- Ultrahigh vacuum measuring ionization gauge  
[NASA-CASE-XLA-05087] c 14 N73-30391
- IONIZATION POTENTIALS**  
Field ionization electrodes Patent  
[NASA-CASE-ERC-10013] c 09 N71-26678
- Modulated voltage metastable ionization detector  
[NASA-CASE-ARC-11503-1] c 35 N85-34374
- IONIZED GASES**  
Probes having ring and primary sensor at same potential to prevent collection of stray wall currents in ionized gases  
[NASA-CASE-XLE-00690] c 25 N69-39884
- Transient heat transfer gauge Patent  
[NASA-CASE-XNP-09802] c 33 N71-15641

Apparatus for extraction and separation of a preferentially photo-dissociated molecular isotope into positive and negative ions by means of an electric field [NASA-CASE-LEW-12465-1] c 25 N78-25148

Hollow cathode apparatus [NASA-CASE-NPO-15560-1] c 33 N85-21491

**IONIZERS**

Water management system and an electrolytic cell therefor Patent [NASA-CASE-MS-C-10960-1] c 03 N71-24718

Method of making dished ion thruster grids [NASA-CASE-LEW-11694-1] c 20 N75-18310

Particle analyzing method and apparatus [NASA-CASE-NPO-15292-1] c 35 N83-27184

**IONIZING RADIATION**

High-voltage cable Patent [NASA-CASE-XNP-00738] c 09 N70-38201

Reinforced polyquinoxaline gasket and method of preparing the same — resistant to ionizing radiation and liquid hydrogen temperatures [NASA-CASE-MFS-21364-1] c 37 N74-18126

Process for crosslinking methylene-containing aromatic polymers with ionizing radiation [NASA-CASE-LAR-13448-1] c 27 N90-21198

**IONOSPHERIC DISTURBANCES**

Method and apparatus for calibrating the ionosphere and application to surveillance of geophysical events [NASA-CASE-NPO-15430-1] c 46 N85-21846

**IONOSPHERIC ELECTRON DENSITY**

Method and apparatus for calibrating the ionosphere and application to surveillance of geophysical events [NASA-CASE-NPO-15430-1] c 46 N85-21846

**IONOSPHERIC SOUNDING**

Method and apparatus for calibrating the ionosphere and application to surveillance of geophysical events [NASA-CASE-NPO-15430-1] c 46 N85-21846

**IONS**

Micrometeoroid analyzer [NASA-CASE-ARC-10443-1] c 14 N73-20477

**IRIDIUM**

Thermocouples of molybdenum and iridium alloys for more stable vacuum-high temperature performance [NASA-CASE-LEW-12174-2] c 35 N79-14346

**IRISES (MECHANICAL APERTURES)**

Active microwave irises and windows [NASA-CASE-LAR-10513-1] c 07 N72-25170

Thin film microwave iris [NASA-CASE-LAR-10511-1] c 09 N72-29172

**IRON**

Negative electrode catalyst for the iron chromium redox energy storage system [NASA-CASE-LEW-14028-1] c 44 N86-19721

**IRON ALLOYS**

Tantalum modified ferritic iron base alloys [NASA-CASE-LEW-12095-1] c 26 N78-18182

Process for making a high toughness-high strength iron alloy [NASA-CASE-LEW-12542-2] c 26 N79-22271

High toughness-high strength iron alloy [NASA-CASE-LEW-12542-3] c 26 N80-32484

Thermal barrier coating system [NASA-CASE-LEW-14057-1] c 24 N85-35233

**IRON CHLORIDES**

Chromium electrodes for REDOX cells [NASA-CASE-LEW-13653-1] c 44 N84-28205

**IRON COMPOUNDS**

Coal desulfurization — using iron pentacarbonyl [NASA-CASE-NPO-14272-1] c 25 N81-33246

**IRRADIATION**

Solar sensor having coarse and fine sensing with matched preirradiated cells and method of selecting cells Patent [NASA-CASE-XLA-01584] c 14 N71-23269

Apparatus for obtaining isotropic irradiation of a specimen [NASA-CASE-MFS-20095] c 24 N72-11595

Production of pure metals [NASA-CASE-LEW-10906-1] c 25 N74-30502

Method for analyzing radiation sensitivity of integrated circuits [NASA-CASE-NPO-14350-1] c 33 N80-14332

Vitro-violet process for producing flame resistant polyamides and products produced thereby — protective clothing for high oxygen environments [NASA-CASE-MS-C-16074-1] c 27 N80-26446

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Instrumentation for measurement of aircraft noise and sonic boom [NASA-CASE-LAR-11173-1] c 35 N75-19614

Cascade plug nozzle — for jet noise reduction [NASA-CASE-LAR-11674-1] c 07 N76-18117

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The engine air intake system [NASA-CASE-ARC-10761-1] c 07 N77-18154

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Jet aircraft configuration Patent [NASA-CASE-XLA-00087] c 02 N70-33332

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Thrust and direction control apparatus Patent [NASA-CASE-XLE-03583] c 31 N71-17629

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Method and apparatus for rapid thrust increases in a turbofan engine [NASA-CASE-LEW-12971-1] c 07 N80-18039

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Method and system for ejecting fairing sections from a rocket vehicle [NASA-CASE-GSC-10590-1] c 31 N73-14853

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Technique of elbow bending small jacketed transfer lines Patent [NASA-CASE-XNP-10475] c 15 N71-24679

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Bonded joint and method — for reducing peak shear stress in adhesive bonds [NASA-CASE-LAR-10900-1] c 37 N74-23064

Flexible joint for pressurizable garment [NASA-CASE-MSC-11072] c 54 N74-32546

Method of making an explosively welded scarf joint [NASA-CASE-LAR-11211-1] c 37 N75-12326

Latching device [NASA-CASE-MFS-21606-1] c 37 N75-19685

Method of determining bond quality of power transistors attached to substrates — X ray inspection of junction microstructure [NASA-CASE-MFS-21931-1] c 37 N75-26372

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Cycling Joule Thomson refrigerator [NASA-CASE-NPO-15251-1] c 31 N83-31897

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Charge storage diode modulators and demodulators [NASA-CASE-NPO-10189-1] c 33 N77-21314

Integrating IR detector imaging systems [NASA-CASE-NPO-15805-1] c 74 N84-28590

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Method of determining bond quality of power transistors attached to substrates — X ray inspection of junction microstructure [NASA-CASE-MFS-21931-1] c 37 N75-26372

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Variable angle tube holder [NASA-CASE-LAR-10507-1] c 11 N72-25284

Method for controlling vapor content of a gas [NASA-CASE-NPO-10633] c 03 N72-28025

Zero gravity liquid mixer [NASA-CASE-LAR-10195-1] c 15 N73-19458

Automatic real-time pair-feeding system for animals [NASA-CASE-ARC-10302-1] c 51 N74-15778

Automated single-slide staining device [NASA-CASE-LAR-11649-1] c 51 N77-27677

Machine for use in monitoring fatigue life for a plurality of elastomeric specimens [NASA-CASE-NPO-13731-1] c 39 N78-10493

The 2 deg/90 deg laboratory scattering photometer — particulate refractivity in hydrosols [NASA-CASE-GSC-12088-1] c 74 N78-13874

Automatic multiple-sample applicator and electrophoresis apparatus [NASA-CASE-ARC-10991-1] c 25 N78-14104

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Reinforced polyquinoxaline gasket and method of preparing the same — resistant to ionizing radiation and liquid hydrogen temperatures [NASA-CASE-MFS-21364-1] c 37 N74-18126

Method of laminating structural members [NASA-CASE-XLA-11028-1] c 24 N74-27035

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Transparent fire resistant polymeric structures [NASA-CASE-ARC-10813-1] c 27 N76-16230

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Honeycomb-laminate composite structure [NASA-CASE-ARC-10913-1] c 24 N78-15180

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High temperature polyimide film laminates and process for preparation thereof  
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Laminate comprising fibers embedded in cured amine terminated bis-imide  
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Fire and heat resistant laminating resins based on maleimide and citraconimide substituted 1-2,4- and -2,6-diaminobenzenes  
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- Method for observing the features characterizing the surface of a land mass  
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- Altitude sensing device  
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Magnetic position detection method and apparatus  
[NASA-CASE-ARC-10178-1] c 21 N72-22619  
Full color hybrid display for aircraft simulators — landing aids  
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**LANDING GEAR**

- Pivotal shock absorbing pad assembly Patent  
[NASA-CASE-XMF-03856] c 31 N70-34159  
Nose gear steering system for vehicle with main skids Patent  
[NASA-CASE-XLA-01804] c 02 N70-34160  
Landing pad assembly for aerospace vehicles Patent  
[NASA-CASE-XMF-02853] c 31 N70-36654  
Aircraft wheel spray drag alleviator Patent  
[NASA-CASE-XLA-01583] c 02 N70-36825  
Space craft soft landing system Patent  
[NASA-CASE-XMF-02108] c 31 N70-36845  
Double-acting shock absorber Patent  
[NASA-CASE-XMF-01045] c 15 N70-40354  
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[NASA-CASE-XMF-01174] c 02 N70-41589  
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**LANDING MODULES**

- Double-acting shock absorber Patent  
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**LANDING SIMULATION**

- Impact simulator Patent  
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**LANTHANUM COMPOUNDS**

- Stabilized lanthanum sulphur compounds — thermoelectric materials  
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- Device for measuring hole elongation in a bolted joint  
[NASA-CASE-LAR-13453-1] c 37 N88-14361

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- Combinational logic for generating gate drive signals for phase control rectifiers  
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Method of examining microcircuit patterns  
[NASA-CASE-NPO-16289-1] c 33 N87-14594

**LARGE SPACE STRUCTURES**

- Structural members, method and apparatus  
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Electrical rotary joint apparatus for large space structures  
[NASA-CASE-MFS-23981-1] c 07 N83-20944  
Beam connector apparatus and assembly  
[NASA-CASE-MFS-25134-1] c 31 N83-31895

- Self-locking mechanical center joint  
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Synchronously deployable truss structure  
[NASA-CASE-LAR-13117-1] c 37 N86-25789  
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[NASA-CASE-LAR-13455-1] c 32 N87-21206  
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[NASA-CASE-LAR-13113-1] c 31 N87-25492  
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[NASA-CASE-LAR-13489-1] c 18 N87-27713  
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[NASA-CASE-MSC-20985-1] c 18 N88-26398  
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Antenna surface contour control system  
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- Sidelooking laser altimeter for a flight simulator  
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- High power laser apparatus and system  
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[NASA-CASE-NPO-13531-1] c 36 N76-24553  
Wind measurement system  
[NASA-CASE-MFS-23362-1] c 47 N77-10753  
Pseudo-backscatter laser Doppler velocimeter employing antiparallel-reflector in the forward direction  
[NASA-CASE-ARC-10970-1] c 36 N77-25501  
Compact pulsed laser having improved heat conductance  
[NASA-CASE-NPO-13147-1] c 36 N77-25502  
Laser extensometer  
[NASA-CASE-MFS-19259-1] c 36 N78-14380  
Apparatus for extraction and separation of a preferentially photo-dissociated molecular isotope into positive and negative ions by means of an electric field  
[NASA-CASE-LEW-12465-1] c 25 N78-25148  
Volumetric direct nuclear pumped laser  
[NASA-CASE-LAR-12183-1] c 36 N79-18307  
Rhomboid prism pair for rotating the plane of parallel light beams  
[NASA-CASE-ARC-11311-1] c 74 N83-13978  
Dual laser optical system and method for studying fluid flow  
[NASA-CASE-MFS-25315-1] c 36 N83-29680  
Portable remote laser sensor for methane leak detection  
[NASA-CASE-NPO-15790-1] c 36 N85-21631  
Method of and apparatus for measuring temperature and pressure — atmospheric sounding  
[NASA-CASE-GSC-12558-1] c 36 N85-21639  
Laser activated MTOS microwave device  
[NASA-CASE-NPO-16112-1] c 33 N86-19516  
Discharge cell for optogalvanic spectroscopy having orthogonal relationship between the probe laser and discharge axis  
[NASA-CASE-NPO-16271-1] c 35 N86-25753  
High-temperature, high-pressure optical cell  
[NASA-CASE-MFS-26000-1] c 74 N87-14971  
Multiplex electric discharge gas laser system  
[NASA-CASE-NPO-16433-1] c 36 N87-23961  
Laser schlieren crystal monitor  
[NASA-CASE-MFS-28060-1] c 76 N87-25862  
Isotope separation using tuned laser and electron beam  
[NASA-CASE-NPO-16907-1-CU] c 25 N88-24732  
Optically controlled welding system  
[NASA-CASE-MFS-29291-1] c 37 N89-12868  
Noncontact temperature pattern measuring device  
[NASA-CASE-NPO-17824-1-CU] c 36 N90-17132  
Isotope exchange in oxide-containing catalyst  
[NASA-CASE-LAR-13542-2-SB] c 25 N90-20154

**LASER CAVITIES**

- Laser apparatus  
[NASA-CASE-GSC-12237-1] c 36 N80-14384  
Laser Resonator  
[NASA-CASE-GSC-12565-1] c 36 N84-14509  
Long gain length solar pumped box laser  
[NASA-CASE-LAR-13256-1] c 36 N86-29204

**LASER DOPPLER VELOCIMETERS**

- Dual wavelength scanning Doppler velocimeter — without perturbation of flow fields  
[NASA-CASE-ARC-10637-1] c 35 N75-16783  
Combined dual scatter, local oscillator laser Doppler velocimeter  
[NASA-CASE-ARC-10642-1] c 36 N76-14447  
Focused laser Doppler velocimeter  
[NASA-CASE-MFS-23178-1] c 35 N77-10493  
Pseudo-backscatter laser Doppler velocimeter employing antiparallel-reflector in the forward direction  
[NASA-CASE-ARC-10970-1] c 36 N77-25501  
Optical scanner — laser doppler velocimeters  
[NASA-CASE-LAR-11711-1] c 74 N78-17866  
Versatile LDV burst simulator  
[NASA-CASE-LAR-11859-1] c 35 N79-14349  
Laser Doppler velocity simulator — to induce frequency shift  
[NASA-CASE-LAR-12176-1] c 36 N80-16321  
Direction sensitive laser velocimeter — determining the direction of particles using a helium-neon laser  
[NASA-CASE-LAR-12177-1] c 36 N81-24422  
Scanning afocal laser velocimeter projection lens system  
[NASA-CASE-LAR-12328-1] c 36 N82-32712  
Powder fed sheared dispersal particle generator  
[NASA-CASE-LAR-12785-1] c 37 N84-16561  
Auto covariance computer  
[NASA-CASE-LAR-12968-1] c 60 N86-21154  
Spinning disk calibration method and apparatus for laser Doppler velocimeter  
[NASA-CASE-ARC-11510-1] c 35 N86-32697  
Vibration-free Raman Doppler velocimeter  
[NASA-CASE-LAR-13268-1] c 35 N87-14669  
Projection lens scanning laser velocimeter system  
[NASA-CASE-ARC-11547-1] c 36 N87-17026  
Dual mode laser velocimeter  
[NASA-CASE-ARC-11634-1] c 36 N88-14350  
Laser Doppler velocimeter multiplexer interface for simultaneous measured events  
[NASA-CASE-ARC-11536-1] c 33 N89-14384  
Frequency domain laser velocimeter signal processor  
[NASA-CASE-LAR-13552-1-CU] c 33 N89-14385  
Three-dimensional laser velocimeter simultaneity detector  
[NASA-CASE-ARC-11876-1] c 36 N90-25340

**LASER DRILLING**

- In-situ laser retorting of oil shale  
[NASA-CASE-LEW-12217-1] c 43 N78-14452

**LASER FUSION**

- Laser surface fusion of plasma sprayed ceramic turbine seals  
[NASA-CASE-LEW-13269-1] c 18 N83-20996

**LASER GUIDANCE**

- Scanning afocal laser velocimeter projection lens system  
[NASA-CASE-LAR-12328-1] c 36 N82-32712

**LASER GYROSCOPES**

- Optical gyroscope system  
[NASA-CASE-NPO-14258-1] c 35 N81-33448  
Laser pulse detection method and apparatus  
[NASA-CASE-NPO-16030-1] c 36 N84-25037

**LASER HEATING**

- Electric power generation system directory from laser power  
[NASA-CASE-NPO-13308-1] c 36 N75-30524  
Method and apparatus for shaping and enhancing acoustical levitation forces  
[NASA-CASE-MFS-25050-1] c 71 N81-15767

**LASER INTERFEROMETRY**

- Dual-beam skin friction interferometer  
[NASA-CASE-ARC-11354-1] c 74 N83-21949

**LASER MATERIALS**

- Laser head for simultaneous optical pumping of several dye lasers — with single flash lamp  
[NASA-CASE-LAR-11341-1] c 36 N75-19655  
Solar pumped laser  
[NASA-CASE-LAR-12870-1] c 36 N84-16542

**LASER MODE LOCKING**

- Laser system with an antiresonant optical ring  
[NASA-CASE-HQN-10844-1] c 36 N75-19653  
Dually mode locked Nd:YAG laser  
[NASA-CASE-GSC-11748-1] c 36 N75-19654  
Length controlled stabilized mode-lock Nd:YAG laser  
[NASA-CASE-GSC-11571-1] c 36 N77-25499  
Geodetic distance measuring apparatus  
[NASA-CASE-GSC-12609-2] c 36 N83-29681  
Method and circuit for controlling the evolution time interval of a laser output pulse  
[NASA-CASE-LAR-13772-1] c 36 N89-28816

**LASER MODES**

- Optical pump and driver system for lasers  
[NASA-CASE-ERC-10283] c 16 N72-25485  
Acoustically controlled distributed feedback laser  
[NASA-CASE-NPO-13175-1] c 36 N75-31427

## LASER OUTPUTS

- Method and apparatus for wavelength tuning of liquid lasers  
[NASA-CASE-ERC-10187] c 16 N69-31343
- Laser Doppler system for measuring three dimensional vector velocity Patent  
[NASA-CASE-MFS-20386] c 21 N71-19212
- Amplitude modulated laser transmitter Patent  
[NASA-CASE-XMS-04269] c 16 N71-22895
- Laser fluid velocity detector Patent  
[NASA-CASE-XAC-10770-1] c 16 N71-24828
- Laser calibrator Patent  
[NASA-CASE-XLA-03410] c 16 N71-25914
- Method and apparatus for optical modulating a light signal Patent  
[NASA-CASE-GSC-10216-1] c 23 N71-26722
- Laser machining apparatus Patent  
[NASA-CASE-HQN-10541-2] c 15 N71-27135
- Optical frequency waveguide and transmission system Patent  
[NASA-CASE-HQN-10541-4] c 16 N71-27183
- Laser communication system for controlling several functions at a location remote to the laser  
[NASA-CASE-LAR-10311-1] c 16 N73-16536
- Power supply for carbon dioxide lasers  
[NASA-CASE-GSC-11222-1] c 16 N73-32391
- Thermomagnetic recording and magneto-optic playback system having constant intensity laser beam control  
[NASA-CASE-NPO-11317-2] c 36 N74-13205
- Apparatus for scanning the surface of a cylindrical body  
[NASA-CASE-NPO-11881-1] c 36 N74-20009
- Optically detonated explosive device  
[NASA-CASE-NPO-11743-1] c 28 N74-27425
- Clear air turbulence detector  
[NASA-CASE-MFS-21244-1] c 36 N75-15028
- Dually mode locked Nd:YAG laser  
[NASA-CASE-GSC-11746-1] c 36 N75-19654
- Laser head for simultaneous optical pumping of several dye lasers — with single flash lamp  
[NASA-CASE-LAR-11341-1] c 36 N75-19655
- Acoustically controlled distributed feedback laser  
[NASA-CASE-NPO-13175-1] c 36 N75-31427
- Optical noise suppression device and method — laser light exposing film  
[NASA-CASE-MSC-12640-1] c 74 N76-31988
- Length controlled stabilized mode-locked Nd:YAG laser  
[NASA-CASE-GSC-11571-1] c 36 N77-25499
- Apparatus for photon excited catalysis  
[NASA-CASE-NPO-13566-1] c 25 N77-32255
- Method and apparatus for Doppler frequency modulation of radiation  
[NASA-CASE-NPO-14524-1] c 32 N80-24510
- High power metallic halide laser — amplifying a copper chloride laser  
[NASA-CASE-NPO-14782-1] c 36 N82-28616
- Collimated beam manifold with the number of output beams variable at a given output angle  
[NASA-CASE-MFS-25312-1] c 74 N83-17305
- Method of and apparatus for double-exposure holographic interferometry  
[NASA-CASE-MFS-25405-1] c 35 N84-22929
- Method and apparatus for coating substrates using a laser  
[NASA-CASE-LEW-13526-1] c 36 N84-22944
- Ranging system which compares an object reflected component of a light beam to a reference component of the light beam  
[NASA-CASE-NPO-15865-1] c 74 N85-34629
- Projection lens scanning laser velocimeter system  
[NASA-CASE-ARC-11547-1] c 36 N87-17026
- Multiplex electric discharge gas laser system  
[NASA-CASE-NPO-16433-1] c 36 N87-23961
- Magnetically switched power supply system for lasers  
[NASA-CASE-NPO-16402-2] c 33 N88-24862
- Method and apparatus for reducing speckle  
[NASA-CASE-LAR-13771-1] c 36 N89-14428
- Method and circuit for controlling the evolution time interval of a laser output pulse  
[NASA-CASE-LAR-13772-1] c 36 N89-28816
- Method and circuit for shaping laser output pulses  
[NASA-CASE-LAR-14203-1] c 36 N89-28817
- Fiber optic sensing system  
[NASA-CASE-LEW-14795-1] c 74 N90-15733
- LASER PLASMAS**  
Continuous plasma laser — method and apparatus for producing intense, coherent, monochromatic light from low temperature plasma  
[NASA-CASE-XNP-04167-3] c 36 N77-19416
- LASER POWER BEAMING**  
Long gain length solar pumped box laser  
[NASA-CASE-LAR-13256-1] c 36 N86-29204
- LASER PUMPING**  
Laser apparatus  
[NASA-CASE-GSC-12237-1] c 36 N80-14384

- Large volume multiple-path nuclear pumped laser  
[NASA-CASE-LAR-12592-1] c 36 N82-13415
- Solar pumped laser  
[NASA-CASE-LAR-12870-1] c 36 N84-16542
- Tm,Ho:YLF laser end-pumped by a semiconductor diode laser array  
[NASA-CASE-NPO-17282-1-CU] c 36 N89-12856
- LASER RANGE FINDERS**  
Laser measuring system for incremental assemblies — measuring wire-wrapped frame assemblies in spark chambers  
[NASA-CASE-GSC-12321-1] c 36 N82-16396
- Range and range rate system  
[NASA-CASE-MSC-20867-1] c 36 N88-24958
- LASER RANGER/TRACKER**  
Method and apparatus for aligning a laser beam projector Patent  
[NASA-CASE-NPO-11087] c 23 N71-29125
- LASER SPECTROMETERS**  
Method and apparatus for enhancing laser absorption sensitivity  
[NASA-CASE-NPO-18587-1-CU] c 36 N87-28006
- LASER SPECTROSCOPY**  
Stark effect spectrophone for continuous absorption spectra monitoring — a technique for gas analysis  
[NASA-CASE-NPO-15102-1] c 25 N81-25159
- LASER WINDOWS**  
Optical scanner — laser doppler velocimeters  
[NASA-CASE-LAR-11711-1] c 74 N78-17866
- LASERS**  
Laser apparatus for removing material from rotating objects Patent  
[NASA-CASE-MFS-11278] c 16 N71-20400
- Laser grating interferometer Patent  
[NASA-CASE-XLA-04295] c 16 N71-24170
- Optical frequency waveguide Patent  
[NASA-CASE-HQN-10541-1] c 07 N71-26291
- Laser camera and diffusion filter therefore Patent  
[NASA-CASE-NPO-10417] c 16 N71-33410
- Optical probing of supersonic flows with statistical correlation  
[NASA-CASE-MFS-20642] c 14 N72-21407
- A technique for breaking ice in the path of a ship  
[NASA-CASE-LAR-10815-1] c 16 N72-22520
- Alignment apparatus using a laser having a gravitationally sensitive cavity reflector  
[NASA-CASE-ARC-10444-1] c 16 N73-33397
- Tunable cavity resonator with ramp shaped supports  
[NASA-CASE-HQN-10790-1] c 36 N74-11313
- Short range laser obstacle detector — for surface vehicles using laser diode array  
[NASA-CASE-NPO-11856-1] c 36 N74-15145
- Long range laser traversing system  
[NASA-CASE-GSC-11262-1] c 36 N74-21091
- Deep trap, laser activated image converting system  
[NASA-CASE-NPO-13131-1] c 36 N75-19652
- Laser system with an antiresonant optical ring  
[NASA-CASE-HQN-10844-1] c 36 N75-19653
- Acoustically controlled distributed feedback laser  
[NASA-CASE-NPO-13175-1] c 36 N75-31427
- Method and apparatus for generating coherent radiation in the ultra-violet region and above by use of distributed feedback  
[NASA-CASE-NPO-13348-1] c 36 N76-28575
- Polarization compensator for optical communications  
[NASA-CASE-GSC-11782-1] c 74 N76-30053
- Gregorian all-reflective optical system  
[NASA-CASE-GSC-12058-1] c 74 N77-26942
- Wideband heterodyne receiver for laser communication system  
[NASA-CASE-GSC-12053-1] c 32 N77-28346
- Method and apparatus for splitting a beam of energy — optical communication  
[NASA-CASE-GSC-12083-1] c 73 N78-32848
- Shock isolator for operating a diode laser on a closed-cycle refrigerator  
[NASA-CASE-GSC-12297-1] c 37 N79-28549
- Method of and apparatus for double-exposure holographic interferometry  
[NASA-CASE-MFS-25405-1] c 35 N84-22929
- Method and apparatus for coating substrates using a laser  
[NASA-CASE-LEW-13526-1] c 36 N84-22944
- Off-axis coherently pumped laser  
[NASA-CASE-GSC-12592-1] c 36 N84-28065
- Means for phase locking the outputs of a surface emitting laser diode array  
[NASA-CASE-NPO-16542-1-CU] c 36 N87-23960
- Magnetically switched power supply system for lasers  
[NASA-CASE-NPO-16402-2] c 33 N88-24862
- Three-dimensional laser velocimeter simultaneously detector  
[NASA-CASE-ARC-11876-1] c 36 N90-25340
- LASING**  
Long gain length solar pumped box laser  
[NASA-CASE-LAR-13256-1] c 36 N86-29204

- Isotope separation using tuned laser and electron beam  
[NASA-CASE-NPO-16907-1-CU] c 25 N88-24732
- LATCHES**  
Despin weight release Patent  
[NASA-CASE-XLA-00679] c 15 N70-38601
- Helmet assembly and latch means therefor Patent  
[NASA-CASE-XMS-04935] c 05 N71-11190
- Quick disconnect latch and handle combination Patent  
[NASA-CASE-MFS-11132] c 15 N71-17649
- Latching mechanism Patent  
[NASA-CASE-XMS-03745] c 15 N71-21076
- Latch/ejector unit Patent  
[NASA-CASE-XLA-03538] c 15 N71-24897
- Latching mechanism Patent  
[NASA-CASE-MSC-15474-1] c 15 N71-26162
- Latch mechanism  
[NASA-CASE-MSC-12549-1] c 37 N74-27903
- Latching device  
[NASA-CASE-MFS-21606-1] c 37 N75-19685
- Load regulating latch  
[NASA-CASE-MSC-19535-1] c 37 N77-32499
- Helmet latching and attaching ring  
[NASA-CASE-XMS-04670] c 54 N78-17678
- Low temperature latching solenoid  
[NASA-CASE-MSC-18106-1] c 33 N82-11357
- CAM controlled retractable door latch  
[NASA-CASE-MSC-20304-1] c 37 N82-31690
- Mechanical end joint system for structural column elements  
[NASA-CASE-LAR-12482-1] c 37 N82-32732
- Hemispherical latching apparatus  
[NASA-CASE-MFS-25837-1] c 18 N85-29991
- Latching mechanism for deployable/re-stowable columns useful in satellite construction  
[NASA-CASE-LAR-13169-1] c 37 N86-25791
- Self indexing latch system  
[NASA-CASE-MFS-25956-1] c 37 N87-21333
- Preloadable vector sensitive latch  
[NASA-CASE-MSC-20910-1] c 37 N87-25582
- Toggle release  
[NASA-CASE-MSC-21354-1] c 37 N88-24969
- Mechanized fluid connector and assembly tool system  
[NASA-CASE-MSC-21434-1] c 37 N90-17138
- LATERAL CONTROL**  
Three-axis controller Patent  
[NASA-CASE-XAC-01404] c 05 N70-41581
- Roll attitude star sensor system Patent  
[NASA-CASE-XNP-01307] c 21 N70-41856
- High speed flight vehicle control Patent  
[NASA-CASE-XLA-08967] c 02 N71-27088
- Vortex-lift roll-control device  
[NASA-CASE-LAR-11868-2] c 08 N79-14108
- Leading edge flap system for aircraft control augmentation  
[NASA-CASE-LAR-12787-2] c 08 N85-19985
- Swashplate control system  
[NASA-CASE-ARC-11633-1] c 08 N87-23631
- LATERAL STABILITY**  
Annular wing  
[NASA-CASE-FRC-11007-2] c 05 N82-26277
- LATEX**  
Molten salt pyrolysis of latex — synthetic hydrocarbon fuel production using the Guayule shrub  
[NASA-CASE-NPO-14315-1] c 27 N81-17261
- Process for preparation of large-particle-size monodisperse latexes  
[NASA-CASE-MFS-25000-1] c 25 N81-19242
- LATHES**  
Apparatus for machining geometric cones Patent  
[NASA-CASE-XMS-04292] c 15 N71-22722
- Lathe tool bit and holder for machining fiberglass materials  
[NASA-CASE-XLA-10470] c 15 N72-21489
- Universal precision sine bar attachment  
[NASA-CASE-MFS-28253-1] c 37 N89-28831
- LAUNCH ESCAPE SYSTEMS**  
Emergency escape system Patent  
[NASA-CASE-XKS-02342] c 05 N71-11199
- Device for separating occupant from an ejection seat Patent  
[NASA-CASE-XMS-04625] c 05 N71-20718
- LAUNCH VEHICLE CONFIGURATIONS**  
Rotating launch device for a remotely piloted aircraft  
[NASA-CASE-ARC-10979-1] c 09 N77-19076
- LAUNCH VEHICLES**  
A support technique for vertically oriented launch vehicles  
[NASA-CASE-XLA-02704] c 11 N69-21540
- Method and apparatus for detection and location of microleaks Patent  
[NASA-CASE-XMF-02307] c 14 N71-10779
- Three stage rocket vehicle with parallel staging  
[NASA-CASE-MFS-25878-1] c 18 N84-27787
- Earth-to-orbit vehicle providing a reusable orbital stage  
[NASA-CASE-LAR-13486-1] c 16 N90-22584



## LAUNCHERS

- Space probe/satellite ejection apparatus for spacecraft  
[NASA-CASE-MFS-15429-1] c 18 N84-22609
- Space probe/satellite ejection apparatus for spacecraft  
[NASA-CASE-MFS-25429-1] c 18 N86-20469
- LAUNCHING PADS**  
Missile launch release system Patent  
[NASA-CASE-XMF-03198] c 30 N70-40353
- Remote controlled tubular disconnect Patent  
[NASA-CASE-XLA-01396] c 03 N71-12259
- Validation device for spacecraft checkout equipment Patent  
[NASA-CASE-XKS-10543] c 07 N71-26292
- LAY-UP**  
Method of making a partial interlaminar separation composite system  
[NASA-CASE-LAR-12065-2] c 24 N81-33235
- LAYERS**  
Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-1] c 28 N78-24365
- LEACHING**  
Process for the leaching of AP from propellant  
[NASA-CASE-NPO-14109-1] c 28 N80-23471
- Infusion extractor  
[NASA-CASE-MSC-20761-1] c 37 N87-15465
- LEAD (METAL)**  
Lead-oxygen dc power supply system having a closed loop oxygen and water system  
[NASA-CASE-MFS-23059-1] c 44 N76-27664
- Catalyst surfaces for the chromous/chromic redox couple  
[NASA-CASE-LEW-13148-2] c 44 N81-29524
- Joining lead wires to thin platinum alloy films  
[NASA-CASE-LEW-13934-1] c 35 N83-35338
- LEAD SULFIDES**  
Integrated photo-responsive metal oxide semiconductor circuit  
[NASA-CASE-GSC-12782-1] c 33 N88-14271
- LEAD TELLURIDES**  
Bonding thermoelectric elements to nonmagnetic refractory metal electrodes  
[NASA-CASE-XGS-04554] c 15 N69-39786
- Segmenting lead telluride-silicon germanium thermoelements Patent  
[NASA-CASE-XGS-05718] c 26 N71-16037
- LEADING EDGE FLAPS**  
Leading edge flap system for aircraft control augmentation  
[NASA-CASE-LAR-12787-2] c 08 N85-19985
- LEADING EDGES**  
Reentry vehicle leading edge Patent  
[NASA-CASE-XLA-00165] c 31 N70-33242
- Leading edge curvature based on convective heating Patent  
[NASA-CASE-XLA-01486] c 01 N71-23497
- Leading edge protection for composite blades  
[NASA-CASE-LEW-12550-1] c 24 N77-19170
- Geometries for roughness shapes in laminar flow  
[NASA-CASE-LAR-13255-1] c 02 N87-16793
- LEAKAGE**  
Rocket chamber leak test fixture  
[NASA-CASE-XFR-09479] c 14 N69-27503
- Method and apparatus for detection and location of microleaks Patent  
[NASA-CASE-XMF-02307] c 14 N71-10779
- Leak detector Patent  
[NASA-CASE-LAR-10323-1] c 12 N71-17573
- Hard space suit Patent  
[NASA-CASE-XAC-07043] c 05 N71-23161
- Method for leakage testing of tanks Patent  
[NASA-CASE-XMF-02392] c 32 N71-24285
- Leak detector wherein a probe is monitored with ultraviolet radiation Patent  
[NASA-CASE-ERC-10034] c 15 N71-24896
- Method for detecting leaks in hermetically sealed containers Patent  
[NASA-CASE-ERC-10045] c 15 N71-24910
- Method and apparatus for detecting gross leaks Patent  
[NASA-CASE-ERC-10033] c 14 N71-26672
- Orifice gross leak tester Patent  
[NASA-CASE-ERC-10150] c 14 N71-28992
- Leak detector  
[NASA-CASE-MFS-21761-1] c 35 N75-15931
- Vacuum leak detector  
[NASA-CASE-LAR-11237-1] c 35 N75-19612
- Low heat leak connector for cryogenic system  
[NASA-CASE-XLE-02367-1] c 31 N79-21225
- Carbon granule probe microphone for leak detection — recovery boilers  
[NASA-CASE-NPO-16027-1] c 35 N85-21597
- Portable remote laser sensor for methane leak detection  
[NASA-CASE-NPO-15790-1] c 36 N85-21631

- Fluid leak indicator  
[NASA-CASE-MSC-20783-1] c 35 N86-20756
- Method of repairing hidden leaks in tubes  
[NASA-CASE-MFS-19796-1] c 37 N86-32736
- Self-compensating solenoid valve  
[NASA-CASE-ARC-11620-1] c 37 N87-25573
- High temperature flexible seal  
[NASA-CASE-LEW-14695-1] c 37 N90-23751
- LEAST SQUARES METHOD**  
Modified fast frequency acquisition via adaptive least squares algorithm  
[NASA-CASE-NPO-17845-1-CU] c 61 N90-27341
- LEG (ANATOMY)**  
Actuator device for artificial leg  
[NASA-CASE-MFS-23225-1] c 52 N77-14735
- Rotational joint assembly for the prosthetic leg  
[NASA-CASE-KSC-11004-1] c 54 N77-30749
- Mechanical energy storage device for hip disarticulation  
[NASA-CASE-ARC-10916-1] c 52 N78-10686
- Drop foot corrective device  
[NASA-CASE-LAR-12259-2] c 54 N86-22112
- LENSES**  
High temperature lens construction Patent  
[NASA-CASE-XNP-04111] c 14 N71-15622
- Image magnification adapter for cameras Patent  
[NASA-CASE-XMF-03844-1] c 14 N71-26474
- Petzval type objective including field shaping lens Patent  
[NASA-CASE-GSC-10700] c 23 N71-30027
- Method and apparatus for eliminating coherent noise in a coherent energy imaging system without destroying spatial coherence  
[NASA-CASE-GSC-11133-1] c 23 N72-11568
- Plural beam antenna  
[NASA-CASE-GSC-11013-1] c 09 N73-19234
- Spatial filter for Q-switched lasers  
[NASA-CASE-LEW-12164-1] c 36 N77-32478
- Process for producing a well-adhered durable optical coating on an optical plastic substrate — abrasion resistant polymethyl methacrylate lenses  
[NASA-CASE-ARC-11039-1] c 74 N78-32854
- Chromatically corrected virtual image visual display — reducing eye strain in flight simulators  
[NASA-CASE-LAR-12251-1] c 74 N80-27185
- Constant magnification optical tracking system  
[NASA-CASE-NPO-14813-1] c 74 N82-24072
- Scanning afocal laser velocimeter projection lens system  
[NASA-CASE-LAR-13238-1] c 36 N82-32712
- Interferometric angle monitor  
[NASA-CASE-GSC-12614-1] c 74 N83-32577
- Projection lens scanning laser velocimeter system  
[NASA-CASE-ARC-11547-1] c 36 N87-17026
- Dual mode laser velocimeter  
[NASA-CASE-ARC-11634-1] c 36 N88-14350
- LENTICULAR BODIES**  
Space and atmospheric reentry vehicle Patent  
[NASA-CASE-XGS-00260] c 31 N70-37924
- LESIONS**  
Apparatus for imaging deep arterial and coronary lesions  
[NASA-CASE-NPO-17439-1-CU] c 52 N90-16391
- LEVEL (HORIZONTAL)**  
Hot wire liquid level detector for cryogenic fluids Patent  
[NASA-CASE-XLE-00454] c 23 N71-17802
- Rotary leveling base platform  
[NASA-CASE-ARC-10981-1] c 37 N78-27425
- LEVEL (QUANTITY)**  
Spherical tank gauge Patent  
[NASA-CASE-XMS-06236] c 14 N71-21007
- Positive dc to positive dc converter Patent  
[NASA-CASE-XMF-14301] c 09 N71-23188
- LEVELING**  
Adjustable attitude guide device Patent  
[NASA-CASE-XLA-07911] c 15 N71-15571
- Electrical switching device Patent  
[NASA-CASE-NPO-10037] c 09 N71-19610
- Adjustable support  
[NASA-CASE-NPO-10721] c 15 N72-27484
- Automatically operable self-leveling load table  
[NASA-CASE-MFS-22039-1] c 09 N75-12968
- LEVITATION**  
Gas levitator having fixed levitation node for containerless processing  
[NASA-CASE-MFS-25509-1] c 35 N83-24828
- Closed loop electrostatic levitation system  
[NASA-CASE-NPO-15553-1] c 33 N85-29142
- LEVITATION MELTING**  
High temperature acoustic levitator  
[NASA-CASE-NPO-16022-1] c 71 N85-22105
- Sample levitation and melt in microgravity  
[NASA-CASE-NPO-17022-1-CU] c 29 N87-25489

## LIFE (DURABILITY)

- Hollow rolling element bearings  
[NASA-CASE-LEW-11087-3] c 37 N74-21064
- Method of increasing minority carrier lifetime in silicon web or the like  
[NASA-CASE-NPO-15530-1] c 76 N83-35888
- Apparatus for disintegrating kidney stones  
[NASA-CASE-GSC-12652-1] c 52 N84-34913
- Method and apparatus for measuring minority carrier lifetime in a direct band-gap semiconductor  
[NASA-CASE-NPO-16337-1-CU] c 33 N87-22894
- Arc-textured high emittance radiator surfaces  
[NASA-CASE-LEW-14679-1] c 27 N89-28651
- LIFE DETECTORS**  
Use of the enzyme hexokinase for the reduction of inherent light levels  
[NASA-CASE-XGS-05533] c 04 N69-27487
- Lyophilized reaction mixtures Patent  
[NASA-CASE-XGS-05532] c 06 N71-17705
- LIFE RAFTS**  
Life raft Patent  
[NASA-CASE-XMS-00863] c 05 N70-34857
- Life raft stabilizer  
[NASA-CASE-MSC-12393-1] c 02 N73-26006
- Modification of one man life raft  
[NASA-CASE-LAR-10241-1] c 54 N74-14845
- LIFE SUPPORT SYSTEMS**  
Shock absorbing support and restraint means Patent  
[NASA-CASE-XMS-01240] c 05 N70-35152
- Portable environmental control system Patent  
[NASA-CASE-XMS-09632-1] c 05 N71-11203
- Extravehicular tunnel suit system Patent  
[NASA-CASE-MSC-12243-1] c 05 N71-24728
- Foreshortened convolute section for a pressurized suit Patent  
[NASA-CASE-XMS-09637-1] c 05 N71-24730
- Orbital escape device Patent  
[NASA-CASE-XMS-06162] c 31 N71-28851
- Specialized halogen generator for purification of water Patent  
[NASA-CASE-XLA-08913] c 14 N71-28933
- Life support system  
[NASA-CASE-MSC-12411-1] c 05 N72-20096
- Air removal device  
[NASA-CASE-XLA-08914] c 15 N73-12492
- Space suit  
[NASA-CASE-MSC-12609-1] c 05 N73-32012
- Catalyst cartridge for carbon dioxide reduction unit  
[NASA-CASE-LAR-10551-1] c 25 N74-12813
- Helmet feedport  
[NASA-CASE-XMS-09653] c 54 N78-17680
- Cooling system for removing metabolic heat from an hermetically sealed spacesuit  
[NASA-CASE-ARC-11059-1] c 54 N78-32721
- Air removal device — life support systems  
[NASA-CASE-XLA-08914-2] c 25 N82-21269
- Suitport extra-vehicular access facility  
[NASA-CASE-ARC-11635-1] c 18 N90-16860
- LIFT**  
Serrated trailing edges for improving lift and drag characteristics of lifting surfaces  
[NASA-CASE-LAR-13870-1] c 05 N90-15094
- LIFT DEVICES**  
Device for handling heavy loads  
[NASA-CASE-XNP-04969] c 11 N69-27466
- Recoverable rocket vehicle Patent  
[NASA-CASE-XMF-00389] c 31 N70-34176
- Direct lift control system Patent  
[NASA-CASE-LAR-10249-1] c 02 N71-26110
- Ferry system  
[NASA-CASE-LAR-10574-1] c 11 N73-13257
- High lift aircraft — with improved stability, control, performance, and noise characteristics  
[NASA-CASE-LAR-11252-1] c 05 N75-25914
- Device for installing rocket engines  
[NASA-CASE-MFS-19220-1] c 20 N76-22296
- Vortex-lift roll-control device  
[NASA-CASE-LAR-11868-2] c 08 N79-14108
- Serrated trailing edges for improving lift and drag characteristics of lifting surfaces  
[NASA-CASE-LAR-13870-1] c 05 N90-15094
- LIFT DRAG RATIO**  
Ring wing tension vehicle Patent  
[NASA-CASE-XLA-04901] c 31 N71-24315
- Annular wing  
[NASA-CASE-FRC-11007-2] c 05 N82-26277
- Slotted variable camber flap  
[NASA-CASE-LAR-12541-1] c 05 N84-22551
- Over-the-wing propeller  
[NASA-CASE-LAR-13134-2] c 07 N87-16828
- LIFTING BODIES**  
Recoverable rocket vehicle Patent  
[NASA-CASE-XMF-00389] c 31 N70-34176
- Lifting body Patent Application  
[NASA-CASE-FRC-10063] c 01 N71-12217



Lift balancing device  
[NASA-CASE-LAR-10348-1] c 11 N73-12264

**LIFTING REENTRY VEHICLES**  
Space and atmospheric reentry vehicle Patent  
[NASA-CASE-XGS-00260] c 31 N70-37924  
Variable geometry manned orbital vehicle Patent  
[NASA-CASE-XLA-03691] c 31 N71-15674  
Flight craft Patent  
[NASA-CASE-XAC-02058] c 02 N71-16087

**LIFTING ROTORS**  
High lift, low pitching moment airfoils  
[NASA-CASE-LAR-13215-1] c 02 N89-14224

**LIGANDS**  
Carboranyl-methylene-substituted phosphazenes and polymers thereof  
[NASA-CASE-ARC-11370-1] c 27 N84-22750

**LIGHT (VISIBLE RADIATION)**  
Anti-glare improvement for optical imaging systems Patent  
[NASA-CASE-NPO-10337] c 14 N71-15604  
Maksutov spectrograph Patent  
[NASA-CASE-XLA-10402] c 14 N71-29041  
Combustion detector  
[NASA-CASE-LAR-10739-1] c 14 N73-16484  
Optical fiber tactile sensor  
[NASA-CASE-NPO-15375-1] c 74 N84-11921  
Light transmitting window assembly  
[NASA-CASE-MS-C-18417-1] c 74 N85-29750

**LIGHT AIRCRAFT**  
Direct lift control system Patent  
[NASA-CASE-LAR-10249-1] c 02 N71-26110

**LIGHT BEAMS**  
Spectroscope equipment using a slender cylindrical reflector as a substitute for a slit Patent  
[NASA-CASE-XGS-08269] c 23 N71-26206  
Multiple hologram recording and readout system Patent  
[NASA-CASE-ERC-10151] c 16 N71-29131  
Rhomboid prism pair for rotating the plane of parallel light beams  
[NASA-CASE-ARC-11311-1] c 74 N83-13978  
Collimated beam manifold with the number of output beams variable at a given output angle  
[NASA-CASE-MFS-25312-1] c 74 N83-17305  
Ranging system which compares an object reflected component of a light beam to a reference component of the light beam  
[NASA-CASE-NPO-15865-1] c 74 N85-34629  
Double window viewing chamber assembly  
[NASA-CASE-MFS-28057-1] c 09 N87-14355  
Laser schlieren crystal monitor  
[NASA-CASE-MFS-28060-1] c 76 N87-25862

**LIGHT EMISSION**  
Method and apparatus for determining optical absorption and emission characteristics of a crystal or non-crystalline fiber  
[NASA-CASE-LAR-13963-1] c 76 N90-24150

**LIGHT EMITTING DIODES**  
Photoelectric detection system — manufacturing automation  
[NASA-CASE-MFS-23776-1] c 33 N82-28545  
Heads up display  
[NASA-CASE-LAR-12630-1] c 06 N84-27733  
Focal plane array optical proximity sensor  
[NASA-CASE-NPO-15155-1] c 74 N85-22139  
Means for phase locking the outputs of a surface emitting laser diode array  
[NASA-CASE-NPO-16542-1-CU] c 36 N87-23960  
Field induced gap infrared detector  
[NASA-CASE-NPO-17526-1-CU] c 35 N89-28796  
Fiber optic sensing system  
[NASA-CASE-LEW-14795-1] c 74 N90-15733

**LIGHT GAS GUNS**  
Hypervelocity gun Patent  
[NASA-CASE-XAC-05902] c 11 N71-18578

**LIGHT MODULATION**  
Retrodirective modulator Patent  
[NASA-CASE-GSC-10062] c 14 N71-15605  
Light intensity modulator controller Patent  
[NASA-CASE-XMS-04300] c 09 N71-19479  
Method and apparatus for optical modulating a light signal Patent  
[NASA-CASE-GSC-10216-1] c 23 N71-26722  
Lamp modulator  
[NASA-CASE-KSC-10565] c 09 N72-25250  
Polarization compensator for optical communications  
[NASA-CASE-GSC-11782-1] c 74 N76-30053  
Method and apparatus for Doppler frequency modulation of radiation  
[NASA-CASE-NPO-14524-1] c 32 N80-24510  
Fluorescent radiation converter  
[NASA-CASE-GSC-12528-1] c 74 N81-24900  
All-optical photochromic spatial light modulators based on photoinduced electron transfer in rigid matrices  
[NASA-CASE-NPO-17612-1-CU] c 74 N90-27487

**LIGHT SCATTERING**

The 2 deg/90 deg laboratory scattering photometer — particulate refractivity in hydrosols  
[NASA-CASE-GSC-12088-1] c 74 N78-13874  
A reference standard for bidirectional reflection distribution function and bidirectional transmission distribution function measurement  
[NASA-CASE-MFS-28183-1] c 74 N89-13253

**LIGHT SCATTERING METERS**  
System for the measurement of ultra-low stray light levels — determining the adequacy of large space telescope systems  
[NASA-CASE-MFS-23513-1] c 74 N79-11865

**LIGHT SOURCES**  
Light radiation direction indicator with a baffle of two parallel grids  
[NASA-CASE-XNP-03930] c 14 N69-24331  
High intensity heat and light unit Patent  
[NASA-CASE-XLA-00141] c 09 N70-33312  
Photosensitive device to detect bearing deviation Patent  
[NASA-CASE-XNP-00438] c 21 N70-35089  
Light position locating system Patent  
[NASA-CASE-XNP-01059] c 23 N71-21821  
Optical systems having spatially invariant outputs  
[NASA-CASE-ERC-10248] c 14 N72-17323  
Ultrastable calibrated light source  
[NASA-CASE-MS-C-12293-1] c 14 N72-27411  
Temperature compensated light source using a light emitting diode  
[NASA-CASE-ARC-10487-1] c 09 N73-14214  
Interferometric rotation sensor  
[NASA-CASE-ARC-10278-1] c 14 N73-25463  
Attitude sensor  
[NASA-CASE-LAR-10586-1] c 19 N74-15089  
Very high intensity light source using a cathode ray tube — electron beams  
[NASA-CASE-XNP-01296] c 33 N75-27250  
Electric arc light source having undercut recessed anode  
[NASA-CASE-ARC-10266-1] c 33 N75-29318  
Uniform variable light source  
[NASA-CASE-NPO-11429-1] c 74 N77-21941

**LIGHT TRANSMISSION**  
Hybrid holographic system using reflected and transmitted object beams simultaneously Patent  
[NASA-CASE-MFS-20074] c 16 N71-15565  
Optical characteristics measuring apparatus Patent  
[NASA-CASE-XNP-08640] c 23 N71-16365  
Optical monitor panel Patent  
[NASA-CASE-KKS-03509] c 14 N71-23175  
Solar cell panels with light transmitting plate  
[NASA-CASE-NPO-10747] c 03 N72-22042  
Optical frequency waveguide and transmission system  
[NASA-CASE-HQN-10541-3] c 23 N72-23695  
Light regulator  
[NASA-CASE-LAR-10836-1] c 26 N72-27784  
Transmitting and reflecting diffuser — for ultraviolet light  
[NASA-CASE-LAR-10385-2] c 70 N74-13436  
Optical instrument employing reticle having preselected visual response pattern formed thereon  
[NASA-CASE-ARC-10976-1] c 74 N77-22950  
Transmitting and reflecting diffuser — using ultraviolet grade fused silica coatings  
[NASA-CASE-LAR-10385-3] c 74 N78-15879  
Constant magnification optical tracking system  
[NASA-CASE-NPO-14813-1] c 74 N82-24072  
Light transmitting window assembly  
[NASA-CASE-MS-C-18417-1] c 74 N85-29750  
Low-loss, high-isolation, fiber-optic isolator  
[NASA-CASE-NPO-17207-1-CU] c 74 N88-25304  
Fiber optic frequency transfer link  
[NASA-CASE-NPO-17703-1-CU] c 74 N89-29191

**LIGHT VALVES**  
Liquid crystal light valve structures  
[NASA-CASE-MS-C-20036-1] c 76 N85-33826  
Wind dynamic range video camera  
[NASA-CASE-MFS-25750-1] c 32 N86-20647

**LIGHTING EQUIPMENT**  
Internal work light Patent  
[NASA-CASE-KKS-05932] c 09 N71-26787  
Pressurized lighting system  
[NASA-CASE-KSC-10644] c 09 N72-27227  
Remote lightning monitor system  
[NASA-CASE-KSC-11031-1] c 33 N79-11315

**LIGHTNING**  
Determining distance to lightning strokes from a single station  
[NASA-CASE-KSC-10698] c 07 N73-20175  
Lightning tracking system  
[NASA-CASE-KSC-10729-1] c 09 N73-32110  
Automatic lightning detection and photographic system  
[NASA-CASE-KSC-10728-1] c 14 N73-32319

Lightning current measuring systems  
[NASA-CASE-KSC-10807-1] c 33 N75-26246  
Lightning current waveform measuring system  
[NASA-CASE-KSC-11018-1] c 33 N79-10337  
Lightning current detector  
[NASA-CASE-KSC-11057-1] c 33 N79-14305  
Lightning discharge identification system  
[NASA-CASE-KSC-11089-1] c 47 N82-24779  
Lightning discharge protection rod  
[NASA-CASE-LAR-13470-1] c 03 N88-14083

**LIMBS (ANATOMY)**  
Prosthesis coupling  
[NASA-CASE-KSC-11069-1] c 52 N79-26772  
Apparatus for determining changes in limb volume  
[NASA-CASE-MS-C-18759-1] c 52 N83-27578

**LIMITER CIRCUITS**  
Variable duration pulse integrator Patent  
[NASA-CASE-XLA-01219] c 10 N71-23084  
Noise limiter Patent  
[NASA-CASE-NPO-10169] c 10 N71-24844  
Velocity limiting safety system Patent  
[NASA-CASE-XLA-07473] c 15 N71-24895  
Low level signal limiter  
[NASA-CASE-XLE-04791] c 32 N74-22096  
Inrush current limiter  
[NASA-CASE-GSC-11789-1] c 33 N77-14333

**LINE SPECTRA**  
Stark cell optoacoustic detection of constituent gases in sample  
[NASA-CASE-NPO-14143-1] c 25 N81-14015  
Optical scanner  
[NASA-CASE-GSC-12897-1] c 74 N87-21679

**LINEAR ACCELERATORS**  
Linear accelerator frequency control system Patent  
[NASA-CASE-XGS-05441] c 10 N71-22962

**LINEAR ARRAYS**  
Multispectral imaging and analysis system — using charge coupled devices and linear arrays  
[NASA-CASE-NPO-13691-1] c 43 N79-17288  
Means for phase locking the outputs of a surface emitting laser diode array  
[NASA-CASE-NPO-16542-1-CU] c 36 N87-23960

**LINEAR CIRCUITS**  
Programmable electronic synthesized capacitance  
[NASA-CASE-GSC-12961-1] c 33 N87-22895

**LINEAR INTEGRATED CIRCUITS**  
Integrating IR detector imaging systems  
[NASA-CASE-NPO-15805-1] c 74 N84-28590

**LINEAR POLARIZATION**  
Wind dynamic range video camera  
[NASA-CASE-MFS-25750-1] c 32 N86-20647  
Equal path, phase shifting, sample point interferometer for monitoring the configuration of surfaces  
[NASA-CASE-NPO-17913-1-CU] c 74 N90-27488

**LINEAR PROGRAMMING**  
Programmable electronic synthesized capacitance  
[NASA-CASE-GSC-12961-1] c 33 N87-22895

**LINEAR RECEIVERS**  
Antenna array at focal plane of reflector with coupling network for beam switching Patent  
[NASA-CASE-GSC-10220-1] c 07 N71-27233

**LINEAR SYSTEMS**  
Linear three-tap feedback shift register Patent  
[NASA-CASE-NPO-10351] c 08 N71-12503  
A m-ary linear feedback shift register with binary logic  
[NASA-CASE-NPO-11868] c 10 N73-20254  
Linear magnetic bearings  
[NASA-CASE-GSC-12582-2] c 37 N85-20337

**LINEARITY**  
Semi-linear ball bearing Patent  
[NASA-CASE-XLA-02809] c 15 N71-22982  
Mechanical actuator Patent  
[NASA-CASE-XGS-04548] c 15 N71-24045  
Linear magnetic bearing  
[NASA-CASE-GSC-12517-1] c 37 N83-32067  
Linear motion valve  
[NASA-CASE-MS-C-20148-1] c 37 N85-29284  
Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NASA 1.71-NPO-15494-2] c 35 N85-34373  
Linearized traveling wave amplifier with hard limiter characteristics  
[NASA-CASE-LEW-13981-2] c 33 N86-21742  
Reciprocating linear motor  
[NASA-CASE-GSC-12773-2] c 33 N87-23904  
Semi-2-interpenetrating networks of high temperature systems  
[NASA-CASE-LAR-13450-1] c 27 N87-28657

**LININGS**  
Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-13268-1] c 27 N82-29453  
Combustor liner construction  
[NASA-CASE-LEW-14035-1] c 07 N84-24577  
Multi-path peristaltic pump  
[NASA-CASE-MS-C-20907-1] c 37 N87-18818

- Tapered, tubular polyester fabric  
[NASA-CASE-MSC-21082-1] c 27 N87-29672  
Steam cooled rich-burn combustor liner  
[NASA-CASE-LEW-13609-1] c 25 N90-11824  
Internal wire guide for GTAW welding  
[NASA-CASE-MFS-29489-1] c 31 N90-23586

## LINKAGES

- Collapsible nozzle extension for rocket engines  
Patent  
[NASA-CASE-MFS-11497] c 28 N71-16224  
Adjustable force probe  
[NASA-CASE-MFS-20760] c 14 N72-33377  
Locking redundant link  
[NASA-CASE-LAR-11900-1] c 37 N79-14382  
Compensating linkage for main rotor control  
[NASA-CASE-LAR-11797-1] c 05 N81-19087  
Preloadable vector sensitive latch  
[NASA-CASE-MSC-20910-1] c 37 N87-25582  
Payload deployment method and system  
[NASA-CASE-MSC-21330-1] c 16 N88-24660  
Skin friction balance  
[NASA-CASE-LAR-13710-1] c 35 N90-17117  
Releasable clamping apparatus  
[NASA-CASE-MFS-28192-1] c 37 N90-17154

## LIQUEFACTION

- Ophthalmic liquefaction pump  
[NASA-CASE-LEW-12051-1] c 52 N75-33640

## LIQUID ATOMIZATION

- Constant-output atomizer — Inhalation therapy and aerosol research  
[NASA-CASE-MFS-25631-1] c 34 N84-12406

## LIQUID BEARINGS

- High speed hybrid bearing comprising a fluid bearing and a rolling bearing connected in series  
[NASA-CASE-LEW-11152-1] c 15 N73-32359  
Turbomachinery rotor support with damping  
[NASA-CASE-MFS-28345-1] c 37 N89-28841

## LIQUID CHROMATOGRAPHY

- Spillage detector for liquid chromatography systems  
[NASA-CASE-MSC-20206-1] c 25 N86-27431

## LIQUID COOLING

- Water cooled contactor for anode in carbon arc mechanism  
[NASA-CASE-XMS-03700] c 15 N69-24266  
External liquid-spray cooling of turbine blades Patent  
[NASA-CASE-XLE-00037] c 28 N70-33372  
Solenoid construction Patent  
[NASA-CASE-XNP-01951] c 09 N70-41929  
Laminar flow enhancement Patent  
[NASA-CASE-NPO-10122] c 12 N71-17631  
Space suit heat exchanger Patent  
[NASA-CASE-XMS-09571] c 05 N71-19439  
Power system with heat pipe liquid coolant lines Patent  
[NASA-CASE-MFS-14114-2] c 09 N71-24807  
Power system with heat pipe liquid coolant lines Patent  
[NASA-CASE-MFS-14114] c 33 N71-27862  
Liquid spray cooling method Patent  
[NASA-CASE-XLE-00027] c 33 N71-29152  
Automatic control of liquid cooling garment by cutaneous and external auditory meatus temperatures  
[NASA-CASE-MSC-13917-1] c 05 N72-15098  
Temperature controller for a fluid cooled garment  
[NASA-CASE-ARC-10599-1] c 05 N73-26071  
Heat exchanger system and method  
[NASA-CASE-LAR-10799-2] c 34 N76-17317  
Liquid cooled brassiere and method of diagnosing malignant tumors therewith  
[NASA-CASE-ARC-11007-1] c 52 N77-14736  
Closed loop spray cooling apparatus — for particle accelerator targets  
[NASA-CASE-LEW-11981-1] c 31 N78-17237  
Low gravity exothermic heating/cooling apparatus  
[NASA-CASE-MSC-25707-1] c 35 N85-29214

## LIQUID CRYSTALS

- Angular velocity and acceleration measuring apparatus  
[NASA-CASE-ERC-10292] c 14 N72-25410  
Electricity measurement devices employing liquid crystalline materials  
[NASA-CASE-ERC-10275] c 26 N72-25680  
Liquid crystal light valve structures  
[NASA-CASE-MSC-20036-1] c 76 N85-33826  
Method for laminar boundary layer transition visualization in flight  
[NASA-CASE-LAR-13554-1] c 02 N89-12551

## LIQUID FILLED SHELLS

- Liquid rocket system Patent  
[NASA-CASE-XNP-00610] c 28 N70-36910  
Fluid sample collector Patent  
[NASA-CASE-XMS-06767-1] c 14 N71-20435  
Fluid containers and resealable septum therefor Patent  
[NASA-CASE-NPO-10123] c 15 N71-24835  
Omnidirectional acceleration device Patent  
[NASA-CASE-HQN-10780] c 14 N71-30265

## LIQUID FLOW

- Reduced gravity liquid configuration simulator  
[NASA-CASE-XLE-02624] c 12 N69-39988  
Liquid junction and method of fabricating the same Patent Application  
[NASA-CASE-NPO-10682] c 15 N70-34699  
Valve actuator Patent  
[NASA-CASE-XHQ-01208] c 15 N70-35409  
Fluid coupling Patent  
[NASA-CASE-XLE-00397] c 15 N70-36492  
Positive displacement flowmeter Patent  
[NASA-CASE-XMF-02822] c 14 N70-41994  
Liquid flow sight assembly Patent  
[NASA-CASE-XLE-02998] c 14 N70-42074  
Ablative system  
[NASA-CASE-LEW-10359-2] c 33 N73-25952  
Zero gravity liquid transfer screen  
[NASA-CASE-KSC-10626] c 14 N73-27378  
System for measuring Reynolds in a turbulently flowing fluid — signal processing  
[NASA-CASE-ARC-10755-2] c 34 N76-27517  
Degassifying and mixing apparatus for liquids — potable water for spacecraft  
[NASA-CASE-MSC-18936-1] c 35 N83-29652  
Multicore printing plate joining  
[NASA-CASE-LEW-13598-1] c 35 N84-22930

## LIQUID HELIUM

- Heat operated cryogenic electrical generator  
[NASA-CASE-NPO-13303-1] c 20 N75-24837  
Helium refrigerator  
[NASA-CASE-NPO-13435-1] c 31 N76-14284  
Cryostat system for temperatures on the order of 2 deg K or less  
[NASA-CASE-NPO-13459-1] c 31 N77-10229  
Multistage refrigeration system  
[NASA-CASE-NPO-13839-1] c 31 N78-25256  
Stabilization of He2(a 3 Sigma u+ molecules in liquid helium by optical pumping for vacuum UV laser  
[NASA-CASE-NPO-13993-1] c 72 N79-13826  
Low cost cryostat  
[NASA-CASE-NPO-14513-1] c 35 N81-14287

## LIQUID HYDROGEN

- Cryogenic thermal insulation Patent  
[NASA-CASE-XMF-05046] c 33 N71-28892  
Reinforced polyquinoxaline gasket and method of preparing the same — resistant to ionizing radiation and liquid hydrogen temperatures  
[NASA-CASE-MFS-21364-1] c 37 N74-18126  
Liquid hydrogen polygeneration system and process  
[NASA-CASE-KSC-11304-2] c 28 N86-23744  
Ten degree Kelvin hydride refrigerator  
[NASA-CASE-NPO-16393-1-CU] c 31 N87-21159  
Rotor self-lubricating axial stop  
[NASA-CASE-MFS-28273-1] c 37 N88-23974

## LIQUID INJECTION

- Thrust vector control apparatus Patent  
[NASA-CASE-XLE-00208] c 28 N70-34294  
Control system for rocket vehicles Patent  
[NASA-CASE-XLA-01163] c 21 N71-15582  
Injector assembly for liquid fueled rocket engines Patent  
[NASA-CASE-XMF-00968] c 28 N71-15660  
Sodium storage and injection system  
[NASA-CASE-NPO-14384-1] c 37 N80-10494  
Method of producing silicon — gas phase reactor multiple injector liquid feed system  
[NASA-CASE-NPO-14382-1] c 31 N80-18231  
Vortex generating flow passage design for increased film cooling effectiveness  
[NASA-CASE-LEW-14039-1] c 34 N85-33433

## LIQUID LASERS

- Method and apparatus for wavelength tuning of liquid lasers  
[NASA-CASE-ERC-10187] c 16 N69-31343

## LIQUID LEVELS

- Inductive liquid level detection system Patent  
[NASA-CASE-XLE-01609] c 14 N71-10500

## LIQUID METALS

- Slug flow magnetohydrodynamic generator  
[NASA-CASE-XLE-02083] c 03 N69-39983  
Two-fluid magnetohydrodynamic system and method for thermal-electric power conversion Patent  
[NASA-CASE-XNP-00644] c 03 N70-36803  
Analytical test apparatus and method for determining oxide content of alkali metal Patent  
[NASA-CASE-XLE-01997] c 06 N71-23527  
Power system with heat pipe liquid coolant lines Patent  
[NASA-CASE-MFS-14114] c 33 N71-27862  
Fluid impervious barrier including liquid metal alloy and method of making same Patent  
[NASA-CASE-XNP-08881] c 17 N71-28747  
Shell side liquid metal boiler  
[NASA-CASE-NPO-10831] c 33 N72-20915  
Method for distillation of liquids  
[NASA-CASE-XNP-08124-2] c 06 N73-13129

- Electromagnetic flow rate meter — for liquid metals  
[NASA-CASE-LEW-10981-1] c 35 N74-21018  
Process for preparing liquid metal electrical contact device  
[NASA-CASE-LEW-11978-1] c 33 N77-26385  
Solar driven liquid metal MHD power generator  
[NASA-CASE-LAR-12495-1] c 44 N83-28573  
Arc spray fabrication of metal matrix composite monolayer  
[NASA-CASE-LEW-13828-1] c 24 N85-30027

## LIQUID NITROGEN

- Cryogenic feedthrough  
[NASA-CASE-LAR-10031] c 15 N72-22484

## LIQUID OXYGEN

- Dye penetrant for surfaces subsequently contacted by liquid oxygen Patent  
[NASA-CASE-XMF-02221] c 18 N71-27170  
Low loss injector for liquid propellant rocket engines  
[NASA-CASE-MFS-25989-1] c 20 N87-14420  
Oxygen chemisorption cryogenic refrigerator  
[NASA-CASE-NPO-16734-1-CU] c 31 N88-14223  
Rotor self-lubricating axial stop  
[NASA-CASE-MFS-28273-1] c 37 N88-23974

## LIQUID PHASES

- Fluid dispensing apparatus and method Patent  
[NASA-CASE-XLE-01182] c 27 N71-15635  
Hydraulic casting of liquid polymers Patent  
[NASA-CASE-XNP-07659] c 06 N71-22975  
Fluid phase analyzer Patent  
[NASA-CASE-NPO-10691] c 14 N71-26199  
Cryogenic liquid sensor  
[NASA-CASE-NPO-10619-1] c 35 N77-21393  
Pumped two-phase heat transfer loop  
[NASA-CASE-MSC-20841-1] c 34 N87-22950  
Solidification processing of alloys using an applied electric field  
[NASA-CASE-MFS-26083-1-CU] c 26 N90-26940

## LIQUID PROPELLANT ROCKET ENGINES

- Annular rocket motor and nozzle configuration Patent  
[NASA-CASE-XLE-00078] c 28 N70-33284  
Attitude and propellant flow control system and method Patent  
[NASA-CASE-XMF-00185] c 21 N70-34539  
Injector for bipropellant rocket engines Patent  
[NASA-CASE-XMF-00148] c 28 N70-38710  
Zero gravity starting means for liquid propellant motors Patent  
[NASA-CASE-XNP-01390] c 28 N70-41275  
Supersonic-combustion rocket  
[NASA-CASE-LEW-11058-1] c 20 N74-13502  
Space vehicle  
[NASA-CASE-MFS-22734-1] c 18 N75-18329  
Fluid thrust control system — for liquid propellant rocket engines  
[NASA-CASE-XMF-05964-1] c 20 N79-21124  
Rocket injector head  
[NASA-CASE-XMF-04592-1] c 20 N79-21125  
Low thrust monopropellant engine  
[NASA-CASE-GSC-12194-2] c 20 N82-18314

## LIQUID ROCKET PROPELLANTS

- Rocket propellant injector Patent  
[NASA-CASE-XLE-00103] c 28 N70-33241  
Liquid rocket system Patent  
[NASA-CASE-XNP-00610] c 28 N70-36910  
Rocket motor system Patent  
[NASA-CASE-XLE-00323] c 28 N70-38505  
High temperature spark plug Patent  
[NASA-CASE-XLE-00660] c 28 N70-39925  
High pressure filter Patent  
[NASA-CASE-XNP-00732] c 28 N70-41447  
Liquid storage tank venting device for zero gravity environment Patent  
[NASA-CASE-XLE-01449] c 15 N70-41646  
Tank construction for space vehicles Patent  
[NASA-CASE-XMF-01899] c 31 N70-41948  
Fluid dispensing apparatus and method Patent  
[NASA-CASE-XLE-01182] c 27 N71-15635  
Control valve and co-axial variable injector Patent  
[NASA-CASE-XNP-09702] c 15 N71-17654  
Slosh alleviator Patent  
[NASA-CASE-XLA-05749] c 15 N71-19569  
Filler valve Patent  
[NASA-CASE-XNP-01747] c 15 N71-23024  
Propellant mass distribution metering apparatus Patent  
[NASA-CASE-NPO-10185] c 10 N71-26339  
Fluid impervious barrier including liquid metal alloy and method of making same Patent  
[NASA-CASE-XNP-08881] c 17 N71-28747  
Response analyzers for sensors Patent  
[NASA-CASE-MFS-11204] c 14 N71-29134  
Passive propellant system  
[NASA-CASE-MFS-23642-1] c 20 N80-10278  
Supercharged topping rocket propellant feed system  
[NASA-CASE-XLE-02062-1] c 20 N80-14188

- Low loss injector for liquid propellant rocket engines  
[NASA-CASE-MFS-25989-1] c 20 N87-14420
- Extended temperature range rocket injector  
[NASA-CASE-LEW-14846-1] c 20 N90-15130
- Methods and apparatus for providing real-time control of a gaseous propellant rocket propulsion system  
[NASA-CASE-MSC-21542-1] c 20 N90-26073
- LIQUID SLOSHING**
- Slosh suppressing device and method Patent  
[NASA-CASE-XMF-00658] c 12 N70-38997
- Flexible ring slosh damping baffle Patent  
[NASA-CASE-LAR-10317-1] c 32 N71-16103
- Buoyant anti-slosh system Patent  
[NASA-CASE-XLA-04605] c 32 N71-16106
- Hot wire liquid level detector for cryogenic fluids Patent  
[NASA-CASE-XLE-00454] c 23 N71-17802
- Slosh alleviator Patent  
[NASA-CASE-XLA-05749] c 15 N71-19569
- Instrument for measuring the dynamic behavior of liquids Patent  
[NASA-CASE-XLA-05541] c 12 N71-26387
- LIQUID SODIUM**
- Sodium storage and injection system  
[NASA-CASE-NPO-14384-1] c 37 N80-10494
- LIQUID-GAS MIXTURES**
- Liquid-gas separation system Patent  
[NASA-CASE-XMS-01824] c 15 N70-40062
- Liquid-gas separator for zero gravity environment Patent  
[NASA-CASE-XMS-01492] c 05 N70-41297
- Liquid storage tank venting device for zero gravity environment Patent  
[NASA-CASE-XLE-01449] c 15 N70-41646
- Separator Patent  
[NASA-CASE-XLA-00415] c 15 N71-16079
- Vapor liquid separator Patent  
[NASA-CASE-XMF-04042] c 15 N71-23023
- Air removal device — life support systems  
[NASA-CASE-XLA-08914-2] c 25 N82-21269
- LIQUID-SOLID INTERFACES**
- Apparatus and procedure to detect a liquid-solid interface during crystal growth in a bridgman furnace  
[NASA-CASE-LAR-13597-1-CU] c 25 N87-23713
- LIQUID-VAPOR INTERFACES**
- Zero gravity separator Patent  
[NASA-CASE-XLE-00586] c 15 N71-15968
- Rotating shaft seal Patent  
[NASA-CASE-XNP-02862-1] c 15 N71-26294
- Response analyzers for sensors Patent  
[NASA-CASE-MFS-11204] c 14 N71-29134
- Acoustic bubble removal method  
[NASA-CASE-NPO-15334-1] c 71 N83-35781
- LIQUIDS**
- Liquid-gas separation system Patent  
[NASA-CASE-XMS-01824] c 15 N70-40062
- Electrical switching device Patent  
[NASA-CASE-NPO-10037] c 09 N71-19610
- Method and apparatus for distillation of liquids Patent  
[NASA-CASE-XNP-08124] c 15 N71-27184
- Apparatus for detecting the amount of material in a resonant cavity container Patent  
[NASA-CASE-XNP-02500] c 18 N71-27397
- Resonant infrasonic gauging apparatus  
[NASA-CASE-MSC-11847-1] c 14 N72-11363
- Ablative system  
[NASA-CASE-LEW-10359] c 33 N72-25911
- Liquid waste feed system  
[NASA-CASE-LAR-10365-1] c 05 N72-27102
- Zero gravity liquid mixer  
[NASA-CASE-LAR-10195-1] c 15 N73-19458
- Bimetallic fluid displacement apparatus — for stirring and heating stored gases and liquids  
[NASA-CASE-LAR-10441-1] c 35 N74-15126
- Method and device for detection of surface discontinuities or defects  
[NASA-CASE-MSC-14187-1] c 35 N74-32879
- Automatic liquid inventory collecting and dispensing unit  
[NASA-CASE-LAR-11071-1] c 35 N75-19611
- Thermal energy storage system — operating on superheating of liquids  
[NASA-CASE-MFS-23167-1] c 44 N76-31667
- Low gravity phase separator  
[NASA-CASE-MSC-14773-1] c 35 N78-12390
- Automatic fluid dispenser  
[NASA-CASE-ARC-10820-1] c 35 N78-19466
- Liquid-immersible electrostatic ultrasonic transducer  
[NASA-CASE-LAR-12465-1] c 33 N82-26572
- System for monitoring physical characteristics of fluids  
[NASA-CASE-NPO-15400-1] c 34 N83-31993
- Liquid thickness gauge  
[NASA-CASE-LAR-13826-1] c 35 N88-29150
- Tank gauging apparatus and method  
[NASA-CASE-MSC-21059-1] c 35 N89-12843
- LITHIUM**
- Lithium counterdoped silicon solar cell  
[NASA-CASE-LEW-14177-1] c 44 N86-32875
- Tm,Ho:YLF laser end-pumped by a semiconductor diode laser array  
[NASA-CASE-NPO-17282-1-CU] c 36 N89-12856
- LITHIUM ALLOYS**
- Elevated temperature aluminum alloys  
[NASA-CASE-LAR-13632-1] c 26 N87-29650
- Aluminum alloy  
[NASA-CASE-LAR-13924-1-CU] c 26 N89-28621
- LITHIUM COMPOUNDS**
- Novel polymers and method of preparing same  
[NASA-CASE-NPO-10998-1] c 06 N73-32029
- LOAD DISTRIBUTION (FORCES)**
- Force measuring instrument Patent  
[NASA-CASE-XMF-00456] c 14 N70-34705
- Multiple Belleville spring assembly Patent  
[NASA-CASE-XNP-00840] c 15 N70-38225
- Device for use in loading tension members — characterized by elongated elastic body  
[NASA-CASE-MFS-21488-1] c 14 N75-24794
- Pneumatic load compensating or controlling system  
[NASA-CASE-ARC-10907-1] c 37 N75-32465
- Load positioning system with gravity compensation  
[NASA-CASE-ARC-11525-1] c 37 N86-27629
- LOAD TESTING MACHINES**
- Load cell protection device Patent  
[NASA-CASE-XMS-06782] c 32 N71-15974
- Load relieving device Patent  
[NASA-CASE-XMS-06329-1] c 15 N71-20441
- Method and apparatus for tensile testing of metal foil  
[NASA-CASE-LAR-10208-1] c 35 N76-18400
- Fatigue failure load indicator  
[NASA-CASE-LAR-12027-1] c 39 N79-22537
- Portable 90 degree proof loading device  
[NASA-CASE-MSC-20250-1] c 35 N86-19581
- Cryogenic insulation strength and bond tester  
[NASA-CASE-MFS-25910-1] c 39 N86-20841
- Device for measuring hole elongation in a bolted joint  
[NASA-CASE-LAR-13453-1] c 37 N88-14361
- Bearing-bypass material system test  
[NASA-CASE-LAR-13458-1] c 35 N88-23967
- Delamination test apparatus and method  
[NASA-CASE-LAR-13985-1] c 24 N89-28586
- Fully articulated four-point-bend loading fixture  
[NASA-CASE-LEW-14776-1] c 37 N90-15445
- LOAD TESTS**
- Differential pressure cell Patent  
[NASA-CASE-XAC-00042] c 14 N70-34816
- Fatigue testing a plurality of test specimens and method  
[NASA-CASE-MFS-28118-1] c 39 N87-25601
- LOADING OPERATIONS**
- Air bearing Patent  
[NASA-CASE-XMF-01887] c 15 N71-10617
- Shuttle car loading system  
[NASA-CASE-NPO-15949-1] c 85 N85-34722
- LOADS (FORCES)**
- Device for handling heavy loads  
[NASA-CASE-XNP-04969] c 11 N69-27466
- Two-plane balance Patent  
[NASA-CASE-XAC-00073] c 14 N70-34813
- Method of improving the reliability of a rolling element system Patent  
[NASA-CASE-XLE-02999] c 15 N71-16052
- Load relieving device Patent  
[NASA-CASE-XMS-06329-1] c 15 N71-20441
- Dual latching solenoid valve Patent  
[NASA-CASE-XMS-05890] c 09 N71-23191
- Transverse piezoresistance and pinch effect electromechanical transducers Patent  
[NASA-CASE-ERC-10088] c 26 N71-25490
- Turn on transient limiter Patent  
[NASA-CASE-GSC-10413] c 10 N71-26531
- Synchronous dc direct drive system Patent  
[NASA-CASE-GSC-10065-1] c 10 N71-27136
- Force-balanced, throttle valve Patent  
[NASA-CASE-NPO-10808] c 15 N71-27432
- Energy absorption device Patent  
[NASA-CASE-XNP-01848] c 15 N71-28959
- Air bearing  
[NASA-CASE-WLP-10002] c 15 N72-17451
- Device for measuring bearing preload  
[NASA-CASE-MFS-20434] c 11 N72-25288
- Variable direction force coupler  
[NASA-CASE-MFS-20317] c 15 N73-13463
- Ergometer  
[NASA-CASE-MFS-21109-1] c 05 N73-27941
- Three-axis adjustable loading structure  
[NASA-CASE-FRC-10051-1] c 35 N74-13129
- Spring operated accelerator and constant force spring mechanism therefor  
[NASA-CASE-ARC-10898-1] c 35 N77-18417
- Penetrometer — for determining load bearing characteristics of inclined surfaces  
[NASA-CASE-NPO-11103-1] c 35 N77-27367
- Load regulating latch  
[NASA-CASE-MSC-19535-1] c 37 N77-32499
- Adjustable indicating device for load position  
[NASA-CASE-MFS-28008-1] c 35 N85-20300
- Aircraft rotor blade with passive tuned tab  
[NASA-CASE-ARC-11444-1] c 05 N85-29947
- Tensile testing apparatus  
[NASA-CASE-LAR-13243-1] c 35 N85-34375
- Dual motion valve with single motion input  
[NASA-CASE-MFS-28058-1] c 37 N87-21332
- Single element magnetic suspension actuator  
[NASA-CASE-LAR-13981-1] c 37 N90-15442
- Fatigue testing apparatus  
[NASA-CASE-LEW-14124-1] c 35 N90-23712
- Power saw  
[NASA-CASE-MSC-21469-1] c 37 N90-26340
- LOCAL AREA NETWORKS**
- Local area network with fault-checking, priorities, and redundant backup  
[NASA-CASE-NPO-16949-1-CU] c 62 N90-19776
- LOCATES SYSTEM**
- Lightning tracking system  
[NASA-CASE-KSC-10729-1] c 09 N73-32110
- Position determination systems — using orbital antenna scan of celestial bodies  
[NASA-CASE-MSC-12593-1] c 17 N76-21250
- LOCKING**
- Coupling device  
[NASA-CASE-XMS-07846-1] c 09 N69-21827
- Self-locking mechanical center joint  
[NASA-CASE-LAR-12864-1] c 37 N85-30336
- Variable length strut with longitudinal compliance and locking capability  
[NASA-CASE-MFS-25907-1] c 37 N85-34401
- Self-locking telescoping manipulator arm  
[NASA-CASE-MFS-25906-1] c 37 N86-20789
- Elbow and knee joint for hard space suits  
[NASA-CASE-ARC-11610-1] c 54 N86-28619
- Locking hinge  
[NASA-CASE-MSC-21056-1] c 18 N88-23827
- Rotary control lock  
[NASA-CASE-NPO-17453-1-CU] c 37 N89-13787
- Quick connect coupling  
[NASA-CASE-MSC-21539-1] c 37 N90-27111
- LOCKS (FASTENERS)**
- Locking device with rolling detents Patent  
[NASA-CASE-XMF-01371] c 15 N70-41829
- Bearing and gimbal lock mechanism and spiral flex lead module Patent  
[NASA-CASE-GSC-10556-1] c 31 N71-26537
- Locking device for turbine rotor blades Patent  
[NASA-CASE-XNP-00816] c 28 N71-28928
- Film feed camera having a detent means Patent  
[NASA-CASE-LAR-10686] c 14 N71-28935
- Safety-type locking pin  
[NASA-CASE-MFS-18495] c 15 N72-11385
- Locking mechanism for orthopedic braces  
[NASA-CASE-GSC-12082-1] c 54 N76-22914
- Portable appliance security apparatus  
[NASA-CASE-GSC-12399-1] c 33 N81-25299
- Locking mechanism for orthopedic braces  
[NASA-CASE-GSC-12082-2] c 52 N81-25661
- High temperature penetrator assembly with bayonet plug and ramp-activated lock  
[NASA-CASE-MSC-18526-1] c 37 N82-24494
- Aircraft canopy lock  
[NASA-CASE-FRC-11065-1] c 05 N83-19737
- Collet lock joint for space station truss  
[NASA-CASE-MSC-21207-1] c 37 N88-29180
- Rotary control lock  
[NASA-CASE-NPO-17453-1-CU] c 37 N89-13787
- LOCOMOTION**
- Jet shoes  
[NASA-CASE-XLA-08491] c 05 N69-21380
- Training vehicle for controlling attitude Patent  
[NASA-CASE-XMS-02977] c 11 N71-10746
- Restraint torso for a pressurized suit  
[NASA-CASE-MSC-12397-1] c 05 N72-25119
- Kinesimetric method and apparatus  
[NASA-CASE-MSC-18929-1] c 39 N83-20280
- LOGARITHMIC RECEIVERS**
- Logarithmic circuit with wide dynamic range  
[NASA-CASE-GSC-12145-1] c 33 N78-32339
- LOGARITHMS**
- Logarithmic function generator utilizing an exponentially varying signal in an inverse manner  
[NASA-CASE-ERC-10267] c 09 N72-23173
- LOGIC CIRCUITS**
- A method for selective gold diffusion of monolithic silicon devices and/or circuits Patent application  
[NASA-CASE-ERC-10072] c 09 N70-11148
- Relay binary circuit Patent  
[NASA-CASE-XMF-00421] c 09 N70-34502

Binary to binary-coded-decimal converter Patent  
[NASA-CASE-XNP-00432] c 08 N70-35423

Analog-to-digital conversion system Patent  
[NASA-CASE-XAC-00404] c 08 N70-40125

Data processor having multiple sections activated at different times by selective power coupling to the sections Patent  
[NASA-CASE-XGS-04767] c 08 N71-12494

Binary sequence detector Patent  
[NASA-CASE-XNP-05415] c 08 N71-12505

AC logic flip-flop circuits Patent  
[NASA-CASE-XGS-00823] c 10 N71-15910

Logic AND gate for fluid circuits Patent  
[NASA-CASE-XLA-07391] c 12 N71-17579

Ripple add and ripple subtract binary counters Patent  
[NASA-CASE-XGS-04766] c 08 N71-18602

Exclusive-Or digital logic module Patent  
[NASA-CASE-XLA-07732] c 08 N71-18751

Stepping motor control circuit Patent  
[NASA-CASE-GSC-10368-1] c 10 N71-18772

Serial digital decoder Patent  
[NASA-CASE-NPO-10150] c 08 N71-24650

BCD to decimal decoder Patent  
[NASA-CASE-XKS-06167] c 08 N71-24890

Current steering switch Patent  
[NASA-CASE-XNP-08567] c 09 N71-26000

Parallel generation of the check bits of a PN sequence Patent  
[NASA-CASE-XNP-04623] c 10 N71-26103

Adaptive system and method for signal generation Patent  
[NASA-CASE-GSC-11367] c 10 N71-26374

Fast response low power drain logic circuits  
[NASA-CASE-GSC-10878-1] c 10 N72-22236

Logical function generator  
[NASA-CASE-XLA-05099] c 09 N73-13209

A synchronous binary array divider  
[NASA-CASE-ERC-10180-1] c 60 N74-20836

Four phase logic systems --- including integrated microcircuits  
[NASA-CASE-MS-C-14240-1] c 33 N75-14957

Interleaving device  
[NASA-CASE-GSC-12111-2] c 33 N81-29342

Logic-controlled occlusive cuff system  
[NASA-CASE-MS-C-14836-1] c 52 N82-11770

Combinational logic for generating gate drive signals for phase control rectifiers  
[NASA-CASE-MFS-25208-1] c 33 N83-10345

Adaptive reference voltage generator for firing angle control of line-commutated inverters  
[NASA-CASE-MFS-25215-1] c 33 N83-31953

Adaptive control system for line-commutated inverters  
[NASA-CASE-MFS-25209-1] c 33 N83-35227

Video processor for air traffic control beacon system  
[NASA-CASE-KSC-11155-1] c 04 N86-19304

Braille reading system  
[NASA-CASE-LAR-13306-1] c 82 N87-29372

Nanosequencer digital logic controller  
[NASA-CASE-NPO-16116-2] c 60 N88-29310

Dynamic resource allocation scheme for distributed heterogeneous computer systems  
[NASA-CASE-NPO-17197-1-CU] c 62 N89-29976

Long period pseudo random number sequence generator  
[NASA-CASE-NPO-17241-1-CU] c 33 N90-23636

**LOGIC PROGRAMMING**  
VLSI binary updown counter  
[NASA-CASE-NPO-17205-1-CU] c 60 N90-21525

**LONGERONS**  
Latching mechanism for deployable/re-stowable columns useful in satellite construction  
[NASA-CASE-LAR-13169-1] c 37 N86-25791

Magnetic spin reduction system for free spinning objects  
[NASA-CASE-MFS-25966-1] c 16 N86-26352

Deployable geodesic truss structure  
[NASA-CASE-LAR-13113-1] c 31 N87-25492

**LONGITUDINAL CONTROL**  
Three-axis controller Patent  
[NASA-CASE-XAC-01404] c 05 N70-41581

Pitch attitude stabilization system utilizing engine pressure ratio feedback signals  
[NASA-CASE-LAR-12562-1] c 08 N81-26152

Remote pivot decoupler pylon: Wing/store flutter suppressor  
[NASA-CASE-LAR-13173-1] c 05 N87-14314

Swashplate control system  
[NASA-CASE-ARC-11633-1] c 08 N87-23631

**LONGITUDINAL STABILITY**  
Annular wing  
[NASA-CASE-FRC-11007-2] c 05 N82-26277

**LOOK ANGLES (ELECTRONICS)**  
Method and apparatus for contour mapping using synthetic aperture radar  
[NASA-CASE-NPO-15939-1] c 43 N86-19711

**LOOP ANTENNAS**

Collapsible loop antenna for space vehicle Patent  
[NASA-CASE-XMF-00437] c 07 N70-40202

Automatic carrier acquisition system  
[NASA-CASE-NPO-11628-1] c 07 N73-30113

**LOOPS**

Endless tape cartridge Patent  
[NASA-CASE-XGS-00769] c 14 N70-41647

Endless tape transport mechanism Patent  
[NASA-CASE-XGS-01223] c 07 N71-10609

Filter for third order phase locked loops  
[NASA-CASE-NPO-11941-1] c 10 N73-27171

High speed shutter --- electrically actuated ribbon loop for shuttering optical or fluid passageways  
[NASA-CASE-ARC-10516-1] c 70 N74-21300

Means for accommodating large overstrain in lead wires --- by storing extra length of wire in stretchable loop  
[NASA-CASE-LAR-10168-1] c 33 N74-22865

Closed loop spray cooling apparatus  
[NASA-CASE-LEW-11981-2] c 34 N79-20336

Pseudonoise code tracking loop  
[NASA-CASE-MS-C-18035-1] c 32 N81-15179

Pulsed phase locked loop strain monitor --- voltage controlled oscillators  
[NASA-CASE-LAR-12772-1] c 33 N83-16626

Pumped two-phase heat transfer loop  
[NASA-CASE-MS-C-20841-1] c 34 N87-22950

Phase length optical phase-locked-loop sensor  
[NASA-CASE-LAR-13387-1] c 74 N88-25302

Polymeric heat pipe wick  
[NASA-CASE-GSC-13019-1] c 34 N88-29133

**LOUVERS**

Solar concentrator protective system  
[NASA-CASE-NPO-15662-1] c 44 N84-28204

**LOW ASPECT RATIO**

Landing arrangement for aerial vehicles Patent  
[NASA-CASE-XLA-00142] c 02 N70-33286

Landing arrangement for aerial vehicle Patent  
[NASA-CASE-XLA-00806] c 02 N70-34858

**LOW CONDUCTIVITY**

High temperature insulation barrier composite  
[NASA-CASE-MFS-29241-1] c 24 N90-23480

**LOW COST**

Fabrication of polycrystalline solar cells on low-cost substrates  
[NASA-CASE-GSC-12022-1] c 44 N76-28635

Process for utilizing low-cost graphite substrates for polycrystalline solar cells  
[NASA-CASE-GSC-12022-2] c 44 N78-24609

Large TV display system  
[NASA-CASE-NPO-16932-1CU] c 33 N87-15413

Network of dedicated processors for finding lowest-cost map path  
[NASA-CASE-NPO-17716-1-CU] c 62 N90-10608

**LOW CURRENTS**

Low current linearization of magnetic amplifier for dc transducer  
[NASA-CASE-NPO-14617-1] c 33 N81-24338

**LOW DENSITY MATERIALS**

Method and device for detecting voids in low density material Patent  
[NASA-CASE-MFS-20044] c 14 N71-28993

Intumescent composition, foamed product prepared therewith and process for making same  
[NASA-CASE-ARC-10304-2] c 27 N74-27037

Mixing insert for foam dispensing apparatus  
[NASA-CASE-MFS-20607-1] c 37 N76-19436

Low density bismaleimide-carbon microballoon composites --- aircraft and submarine compartment safety  
[NASA-CASE-ARC-11040-2] c 24 N78-27184

Low density bismaleimide-carbon microballoon composites  
[NASA-CASE-ARC-11040-1] c 24 N79-16915

Catalysts for polyimide foams from aromatic isocyanates and aromatic dianhydrides --- flame retardant foams  
[NASA-CASE-ARC-11107-1] c 25 N80-16116

Elevated temperature aluminum alloys  
[NASA-CASE-LAR-13632-1] c 26 N87-29650

**LOW FREQUENCIES**

Seismic displacement transducer Patent  
[NASA-CASE-XMF-00479] c 14 N70-34794

Low-frequency radio navigation system  
[NASA-CASE-NPO-15264-1] c 04 N84-27713

**LOW GRAVITY MANUFACTURING**

Method for manufacturing mirrors in zero gravity environment  
[NASA-CASE-MS-C-12611-1] c 12 N76-15189

Gas levitator having fixed levitation node for containerless processing  
[NASA-CASE-MFS-25509-1] c 35 N83-24828

Method and apparatus for supercooling and solidifying substances  
[NASA-CASE-MFS-25242-1] c 35 N83-29650

Apparatus and method for quiescent containerless processing of high temperature metals and alloys in low gravity  
[NASA-CASE-MFS-28087-1] c 35 N87-23944

Sample levitation and melt in microgravity  
[NASA-CASE-NPO-17022-1-CU] c 29 N87-25489

**LOW MOLECULAR WEIGHTS**

Process for preparation of high-molecular-weight polyaryloxysilanes Patent  
[NASA-CASE-XMF-08674] c 06 N71-28807

**LOW NOISE**

Low phase noise digital frequency divider  
[NASA-CASE-NPO-11569] c 10 N73-26229

Reflected-wave maser --- low noise amplifier  
[NASA-CASE-NPO-13490-1] c 36 N76-31512

Low noise tuned amplifier  
[NASA-CASE-GSC-12567-1] c 33 N84-22887

Low noise cryogenic dielectric resonator oscillator  
[NASA-CASE-NPO-17157-1-CU] c 33 N88-26596

**LOW PASS FILTERS**

Filtering technique based on high-frequency plant modeling for high-gain control  
[NASA-CASE-LAR-12215-1] c 08 N79-23097

Smoother filter for digital to analog conversion  
[NASA-CASE-FRC-11025-1] c 33 N82-24417

Discriminator aided phase lock acquisition for suppressed carrier signals  
[NASA-CASE-NPO-14311-1] c 33 N82-29539

Digital carrier demodulator employing components working beyond normal limits  
[NASA-CASE-NPO-17628-1-CU] c 32 N89-28684

**LOW PRESSURE**

Gas low pressure low flow rate metering system Patent  
[NASA-CASE-FRC-10022] c 12 N71-26546

Bakeable McLeod gauge  
[NASA-CASE-XGS-01293-1] c 35 N79-33450

**LOW SPEED**

Variable geometry manned orbital vehicle Patent  
[NASA-CASE-XLA-03691] c 31 N71-15674

RC rate generator for slow speed measurement Patent  
[NASA-CASE-XMF-02966] c 10 N71-24863

**LOW TEMPERATURE**

Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-3] c 28 N81-14103

Cellular thermosetting fluoropolymers and process for making them  
[NASA-CASE-GSC-13008-1] c 27 N88-23894

**LOW TEMPERATURE ENVIRONMENTS**

Frangible electrochemical cell  
[NASA-CASE-XGS-10010] c 03 N72-15986

**LOW TEMPERATURE TESTS**

Low temperature flexure fatigue cryostat Patent  
[NASA-CASE-XMF-02964] c 14 N71-17659

Horizontal cryostat for fatigue testing Patent  
[NASA-CASE-XMF-10968] c 14 N71-24234

Heating and cooling system --- for fatigue test specimens  
[NASA-CASE-LAR-12393-1] c 34 N83-34221

**LOW THRUST**

Low thrust monopropellant engine  
[NASA-CASE-GSC-12194-2] c 20 N82-18314

**LOW VACUUM**

Vibration damping system Patent  
[NASA-CASE-XMS-01820] c 23 N71-15673

**LOW VOLTAGE**

High speed low level electrical stepping switch Patent  
[NASA-CASE-XAC-00060] c 09 N70-39915

Flexible blade antenna Patent  
[NASA-CASE-MS-C-12101] c 09 N71-18720

Failure sensing and protection circuit for converter networks Patent  
[NASA-CASE-GSC-10114-1] c 10 N71-27366

**LOWER BODY NEGATIVE PRESSURE**

Method and apparatus for simulating gravitational forces on a living organism  
[NASA-CASE-MS-C-20202-1] c 54 N84-16803

**LUBRICANTS**

Metallic film diffusion for boundary lubrication Patent  
[NASA-CASE-XLE-01765] c 18 N71-10772

Metallic film diffusion for boundary lubrication Patent  
[NASA-CASE-XLE-10337] c 15 N71-24046

Fluorinated esters of polycarboxylic acids  
[NASA-CASE-MFS-21040-1] c 06 N73-30098

Thiophenyl ether disiloxanes and trisiloxanes useful as lubricant fluids  
[NASA-CASE-MFS-22411-1] c 37 N74-21058

Journal bearings --- for lubricant films  
[NASA-CASE-LEW-11076-1] c 37 N74-21061

Method for milling and drilling glass  
[NASA-CASE-GSC-12636-1] c 31 N83-27058

**LUBRICATING OILS**  
Foil seal Patent  
[NASA-CASE-XLE-05130-2] c 15 N71-19570

## LUBRICATION

Production of hollow components for rolling element bearings by diffusion welding  
[NASA-CASE-LEW-11026-1] c 15 N73-33383

Variable resistance constant tension and lubrication device — using oil-saturated leather wiper  
[NASA-CASE-KSC-10723-1] c 37 N75-13265

Fluid journal bearings  
[NASA-CASE-LEW-11076-4] c 37 N76-15461

## LUBRICATION SYSTEMS

Hybrid lubrication system and bearing Patent  
[NASA-CASE-XNP-01641] c 15 N71-22997

Fluid lubricant system Patent  
[NASA-CASE-XNP-03972] c 15 N71-23048

Journal Bearings  
[NASA-CASE-LEW-11076-2] c 37 N74-32921

Oil cooling system for a gas turbine engine  
[NASA-CASE-LEW-12321-1] c 37 N78-10467

## LUGS

Don/doff support stand for use with rear entry space suits  
[NASA-CASE-MSC-21364-1] c 54 N89-13889

## LUMINAIRES

Visual target for retrofire attitude control  
[NASA-CASE-XMS-12158-1] c 31 N69-27499

Ultraviolet resonance lamp Patent  
[NASA-CASE-ARC-10030] c 09 N71-12521

Lamp modulator  
[NASA-CASE-KSC-10565] c 09 N72-25250

Driving lamps by induction  
[NASA-CASE-MFS-21214-1] c 09 N73-30181

Uniform variable light source  
[NASA-CASE-NPO-11429-1] c 74 N77-21941

Direct current ballast circuit for metal halide lamp  
[NASA-CASE-MSC-18407-1] c 33 N82-24427

## LUMINANCE

Television camera video level control system  
[NASA-CASE-MSC-18578-1] c 32 N85-21427

## LUMINOSITY

Measurement of time differences between luminous events Patent  
[NASA-CASE-XLA-01987] c 23 N71-23976

## LUMINOUS INTENSITY

Motion picture camera for optical pyrometry Patent  
[NASA-CASE-XLA-00062] c 14 N70-33254

Radiant energy intensity measurement system Patent  
[NASA-CASE-XNP-06510] c 14 N71-23797

Continuous plasma laser — method and apparatus for producing intense, coherent, monochromatic light from low temperature plasma  
[NASA-CASE-XNP-04167-3] c 36 N77-19416

Solar cell assembly — for use under high intensity illumination  
[NASA-CASE-LEW-11549-1] c 44 N77-19571

Compact, high intensity arc lamp with internal magnetic field producing means  
[NASA-CASE-NPO-11510-1] c 33 N77-21315

System for the measurement of ultra-low stray light levels — determining the adequacy of large space telescope systems  
[NASA-CASE-MFS-23513-1] c 74 N79-11865

Wind dynamic range video camera  
[NASA-CASE-MFS-25750-1] c 32 N86-20647

## LUMPING

Acoustic agglomeration methods and apparatus  
[NASA-CASE-NPO-15466-1] c 71 N85-22104

## LUNAR BASES

Self-adjusting multisegment, deployable, natural circulation radiator Patent  
[NASA-CASE-XHQ-03673] c 33 N71-29046

## LUNAR COMMUNICATION

Television signal scan rate conversion system Patent  
[NASA-CASE-XMS-07168] c 07 N71-11300

Emergency lunar communications system  
[NASA-CASE-MFS-21042] c 07 N72-25171

## LUNAR COMPOSITION

Lunar penetrometer Patent  
[NASA-CASE-XLA-00934] c 14 N71-22765

## LUNAR EXPLORATION

Backpack carrier Patent  
[NASA-CASE-LAR-10056] c 05 N71-12351

Lunar penetrometer Patent  
[NASA-CASE-XLA-00934] c 14 N71-22765

Personal propulsion unit Patent  
[NASA-CASE-MFS-20130] c 28 N71-27585

Emergency lunar communications system  
[NASA-CASE-MFS-21042] c 07 N72-25171

## LUNAR GRAVITATION

Subgravity simulator Patent  
[NASA-CASE-XMS-04798] c 11 N71-21474

## LUNAR GRAVITY SIMULATOR

Impact simulator Patent  
[NASA-CASE-XLA-00493] c 11 N70-34786

## LUNAR LANDING

Lunar landing flight research vehicle Patent  
[NASA-CASE-XFR-00929] c 31 N70-34966

## LUNAR LOGISTICS

Personal propulsion unit Patent  
[NASA-CASE-MFS-20130] c 28 N71-27585

## LUNAR ROCKS

Sample collecting impact bit Patent  
[NASA-CASE-XNP-01412] c 15 N70-42034

## LUNAR SOIL

Soil particles separator, collector and viewer Patent  
[NASA-CASE-XNP-09770] c 15 N71-20440

Material handling device Patent  
[NASA-CASE-XNP-09770-3] c 11 N71-27036

Self-recording portable soil penetrometer  
[NASA-CASE-MFS-20774] c 14 N73-19420

Method for obtaining oxygen from lunar or similar soil  
[NASA-CASE-MSC-12408-1] c 46 N74-13011

## LUNAR SURFACE VEHICLES

Deformable vehicle wheel Patent  
[NASA-CASE-MFS-20400] c 31 N71-18611

Resilient wheel Patent  
[NASA-CASE-MFS-13929] c 15 N71-27091

## LUNGS

Instrument for use in performing a controlled Valsalva maneuver Patent  
[NASA-CASE-XMS-01615] c 05 N70-41329

## M

## MACH NUMBER

Wind tunnel supplementary Mach number minimum section insert  
[NASA-CASE-LAR-12532-1] c 09 N82-11088

## MACHINE LEARNING

Neural network with dynamically adaptable neurons  
[NASA-CASE-NPO-17803-1-CU] c 62 N90-27385

## MACHINE TOOLS

Rock drill for recovering samples  
[NASA-CASE-XNP-07478] c 14 N69-21923

Protective device for machine and metalworking tools Patent  
[NASA-CASE-XLE-01082] c 15 N71-22797

Aligning and positioning device Patent  
[NASA-CASE-XMS-04178] c 15 N71-22798

Extrusion die for refractory metals Patent  
[NASA-CASE-XLE-06773] c 15 N71-23817

Layout tool Patent  
[NASA-CASE-FRC-10005] c 15 N71-26145

Optical machine tool alignment indicator Patent  
[NASA-CASE-XAC-09489-1] c 15 N71-26673

Caterpillar micro positioner  
[NASA-CASE-GSC-10780-1] c 14 N72-16283

Geneva mechanism — including star wheel and driver  
[NASA-CASE-NPO-13281-1] c 37 N75-13266

Zero torque gear head wrench  
[NASA-CASE-NPO-13059-1] c 37 N76-20480

Precision alignment apparatus for cutting a workpiece  
[NASA-CASE-LAR-11658-1] c 37 N77-14478

Toggle mechanism for pinching metal tubes  
[NASA-CASE-GSC-12274-1] c 37 N79-28550

Method and tool for machining a transverse slot about a bore  
[NASA-CASE-LAR-11855-1] c 37 N81-14319

Crystal cleaving machine  
[NASA-CASE-GSC-12584-1] c 37 N82-32730

Holding fixture for a hot stamping press  
[NASA-CASE-GSC-12619-1] c 37 N84-12491

Alignment and assembly tool for very large diameter cylinders  
[NASA-CASE-MFS-28001-2] c 37 N88-14360

## MACHINERY

Stirring apparatus for plural test tubes Patent  
[NASA-CASE-XAC-06956] c 15 N71-21177

Precipitation detector Patent  
[NASA-CASE-XLA-02619] c 10 N71-26334

Apparatus for forming drive belts  
[NASA-CASE-NPO-13205-1] c 31 N74-32917

## MACHINING

Laser machining apparatus Patent  
[NASA-CASE-HQN-10541-2] c 15 N71-27135

Lathe tool bit and holder for machining fiberglass materials  
[NASA-CASE-XLA-10470] c 15 N72-21489

Drilled ball bearing with a one piece anti-tipping cage assembly  
[NASA-CASE-LEW-11925-1] c 37 N75-31446

## MAGNESIUM

Nondestructive spot test method for magnesium and magnesium alloys  
[NASA-CASE-LAR-10953-1] c 17 N73-27446

## MAGNESIUM ALLOYS

Method and apparatus for bonding a plastics sleeve onto a metallic body Patent  
[NASA-CASE-XLA-01262] c 15 N71-21404

Nondestructive spot test method for magnesium and magnesium alloys  
[NASA-CASE-LAR-10953-1] c 17 N73-27446

## MAGNESIUM OXIDES

Method for determining presence of OH in magnesium oxide  
[NASA-CASE-NPO-10774] c 06 N72-17095

Edge geometry superconducting tunnel junctions utilizing an NbN/MgO/NbN thin film structure  
[NASA-CASE-NPO-17812-1-CU] c 76 N90-17456

## MAGNET COILS

Superconducting alternator  
[NASA-CASE-XLE-02824] c 03 N69-39890

Circuit breaker utilizing magnetic latching relays Patent  
[NASA-CASE-MSC-11277] c 09 N71-29008

## MAGNETIC AMPLIFIERS

Low current linearization of magnetic amplifier for dc transducer  
[NASA-CASE-NPO-14617-1] c 33 N81-24338

## MAGNETIC BEARINGS

Linear magnetic bearing  
[NASA-CASE-GSC-12517-1] c 37 N83-32067

Linear magnetic bearings  
[NASA-CASE-GSC-12582-2] c 37 N85-20337

Radial and torsionally controlled magnetic bearing  
[NASA-CASE-GSC-12957-1] c 37 N87-17038

## MAGNETIC CHARGE DENSITY

Electrostatic ion engine having a permanent magnetic circuit Patent  
[NASA-CASE-XLE-01124] c 28 N71-14043

## MAGNETIC CIRCUITS

Electrostatic ion engine having a permanent magnetic circuit Patent  
[NASA-CASE-XLE-01124] c 28 N71-14043

## MAGNETIC COILS

Time-division multiplexer Patent  
[NASA-CASE-XNP-00431] c 09 N70-38998

Linear magnetic brake with two windings Patent  
[NASA-CASE-XLE-05079] c 15 N71-17652

## MAGNETIC COILS

Safe-arm initiator Patent  
[NASA-CASE-LAR-10372] c 09 N71-18599

Magnifying image intensifier  
[NASA-CASE-GSC-12010-1] c 74 N78-18905

Radial and torsionally controlled magnetic bearing  
[NASA-CASE-GSC-12957-1] c 37 N87-17038

## MAGNETIC CONTROL

Fast opening diaphragm Patent  
[NASA-CASE-XLA-03660] c 15 N71-21060

Magnetically controlled plasma accelerator Patent  
[NASA-CASE-XLA-00327] c 25 N71-29184

Axially and radially controllable magnetic bearing  
[NASA-CASE-GSC-11551-1] c 37 N76-18459

Magnetic bearing system  
[NASA-CASE-GSC-11978-1] c 37 N77-17484

Low temperature latching solenoid  
[NASA-CASE-MSC-18106-1] c 33 N82-11357

## MAGNETIC CORES

Variable frequency magnetic multivibrator Patent  
[NASA-CASE-XGS-00458] c 09 N70-38604

Variable frequency magnetic multivibrator Patent  
[NASA-CASE-XGS-00131] c 09 N70-38995

Magnetic counter Patent  
[NASA-CASE-XNP-08836] c 09 N71-12515

Pulse-type magnetic core memory element circuit with blocking oscillator feedback Patent  
[NASA-CASE-XGS-03303] c 08 N71-18595

Magnetic core current steering commutator Patent  
[NASA-CASE-NPO-10201] c 08 N71-18694

Drive circuit utilizing two cores Patent  
[NASA-CASE-NPO-01318] c 10 N71-23033

Saturation current protection apparatus for saturable core transformers Patent  
[NASA-CASE-ERC-10075] c 09 N71-24800

Magnetic power switch Patent  
[NASA-CASE-NPO-10242] c 09 N71-24803

Unsaturating saturable core transformer Patent  
[NASA-CASE-ERC-10125] c 09 N71-24893

Thermally cycled magnetometer Patent  
[NASA-CASE-XAC-03740] c 14 N71-26135

Digital memory sense amplifying means Patent  
[NASA-CASE-XNP-01012] c 08 N71-28925

Method of detecting impending saturation of magnetic cores  
[NASA-CASE-ERC-10089] c 23 N72-17747

Current steering commutator  
[NASA-CASE-NPO-10743] c 08 N72-21199

Banded transformer cores  
[NASA-CASE-NPO-11966-1] c 33 N74-17928

## MAGNETIC DIPOLES

Balance torque meter Patent  
[NASA-CASE-XGS-01013] c 14 N71-23725

## MAGNETIC DISKS

Disk pack cleaning table Patent Application  
[NASA-CASE-LAR-10590-1] c 15 N70-26819

## MAGNETIC FIELD CONFIGURATIONS

Mass spectrometer with magnetic pole pieces providing the magnetic fields for both the magnetic sector and an ion-type vacuum pump  
[NASA-CASE-NPO-13663-1] c 35 N77-14406  
Magnifying image intensifier  
[NASA-CASE-GSC-12010-1] c 74 N78-18905

## MAGNETIC FIELDS

Electric-arc heater Patent  
[NASA-CASE-XLA-00330] c 33 N70-34540  
Means for communicating through a layer of ionized gases Patent  
[NASA-CASE-XLA-01127] c 07 N70-41372  
Liquid storage tank venting device for zero gravity environment Patent  
[NASA-CASE-XLE-01449] c 15 N70-41646  
Electrostatic ion engine having a permanent magnetic circuit Patent  
[NASA-CASE-XLE-01124] c 28 N71-14043  
Wide range linear fluxgate magnetometer Patent  
[NASA-CASE-XGS-01587] c 14 N71-15962  
Position sensing device employing misaligned magnetic field generating and detecting apparatus Patent  
[NASA-CASE-XGS-07514] c 23 N71-16099  
Nonmagnetic, explosive actuated indexing device Patent  
[NASA-CASE-XGS-02422] c 15 N71-21529  
Solar cell and circuit array and process for nullifying magnetic fields Patent  
[NASA-CASE-XGS-03390] c 03 N71-23187  
Balance torqueometer Patent  
[NASA-CASE-XGS-01013] c 14 N71-23725  
Two axis fluxgate magnetometer Patent  
[NASA-CASE-GSC-10441-1] c 14 N71-27325  
Segmented superconducting magnet for a broadband traveling wave maser Patent  
[NASA-CASE-XGS-10518] c 16 N71-28554  
Magnetic position detection method and apparatus  
[NASA-CASE-ARC-10179-1] c 21 N72-22619  
Ion thruster  
[NASA-CASE-LEW-10770-1] c 28 N72-22770  
Ion thruster magnetic field control  
[NASA-CASE-LEW-10835-1] c 28 N72-22771  
Determining distance to lightning strokes from a single station  
[NASA-CASE-KSC-10698] c 07 N73-20175  
Superconductive magnetic-field-trapping device  
[NASA-CASE-XNP-01185] c 26 N73-28710  
Electron beam controller — using magnetic field to refocus spent electron beam in microwave oscillator tube  
[NASA-CASE-LEW-11617-1] c 33 N74-10195  
Magnetometer using superconducting rotating body  
[NASA-CASE-NPO-13388-1] c 35 N76-16390  
Compact, high intensity arc lamp with internal magnetic field producing means  
[NASA-CASE-NPO-11510-1] c 33 N77-21315  
Magnetic heat pumping  
[NASA-CASE-LEW-12508-1] c 34 N78-17335  
Atomic hydrogen storage — cryotrapping and magnetic field strength  
[NASA-CASE-LEW-12081-2] c 28 N80-20402  
Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-3] c 28 N81-14103  
Magnetic field control — electromechanical torquing device  
[NASA-CASE-MFS-23828-1] c 33 N82-26569  
Magnetic heading reference  
[NASA-CASE-LAR-12638-1] c 04 N84-14132  
Magnetically actuated compressor  
[NASA-CASE-GSC-12799-1] c 31 N85-21404  
Reciprocating magnetic refrigerator employing tandem porous matrices within a reciprocating displacer  
[NASA-CASE-NPO-16257-1] c 31 N85-29082  
Maser cavity servo-tuning system  
[NASA-CASE-NPO-15890-1-CU] c 33 N85-29143  
Magnetic drive coupling  
[NASA-CASE-MS-C-21171-1] c 37 N88-23973  
Magnetic attachment mechanism  
[NASA-CASE-MS-C-21095-1] c 37 N89-12866

**MAGNETIC FILMS**  
Manganese bismuth films with narrow transfer characteristics for Curie-point switching  
[NASA-CASE-NPO-11336-1] c 76 N79-16678

**MAGNETIC FLUX**  
Excitation and detection circuitry for a flux responsive magnetic head  
[NASA-CASE-XNP-04183] c 09 N69-24329  
Cryogenic apparatus for measuring the intensity of magnetic fields  
[NASA-CASE-XAC-02407] c 14 N69-27423  
Flux sensing device using a tubular core with toroidal gating coil and solenoidal output coil wound thereon Patent  
[NASA-CASE-XGS-01881] c 09 N70-40123

Hybrid lubrication system and bearing Patent  
[NASA-CASE-XNP-01641] c 15 N71-22997  
Saturation current protection apparatus for saturable core transformers Patent  
[NASA-CASE-ERC-10075] c 09 N71-24800  
Continuous magnetic flux pump  
[NASA-CASE-XNP-01187] c 15 N73-28516  
Magnetic-flux pump  
[NASA-CASE-XNP-01188] c 15 N73-32361  
Magnetic bearing — for supplying magnetic fluxes  
[NASA-CASE-GSC-11079-1] c 37 N75-18574  
Linear magnetic motor/generator — to generate electric energy using magnetic flux for spacecraft power supply  
[NASA-CASE-GSC-12518-1] c 33 N82-24421  
Linear magnetic bearing  
[NASA-CASE-GSC-12517-1] c 37 N83-32067  
Induction heating gun  
[NASA-CASE-LAR-13181-1] c 31 N85-29083  
Radial and torsionally controlled magnetic bearing  
[NASA-CASE-GSC-12957-1] c 37 N87-17038

## MAGNETIC FORMING

Magnetomotive metal working device Patent  
[NASA-CASE-XMF-03793] c 15 N71-24833  
Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMF-05114-3] c 15 N71-24865

## MAGNETIC INDUCTION

Continuously operating induction plasma accelerator Patent  
[NASA-CASE-XLA-01354] c 25 N70-36946  
Drive circuit for minimizing power consumption in inductive load Patent  
[NASA-CASE-NPO-10716] c 09 N71-24892  
Constant frequency output two stage induction machine systems Patent  
[NASA-CASE-ERC-10065] c 09 N71-27364  
Magnetically actuated tuning method for Gunn oscillators  
[NASA-CASE-NPO-12106] c 09 N73-15235  
High speed shutter — electrically actuated ribbon loop for shuttering optical or fluid passageways  
[NASA-CASE-ARC-10516-1] c 70 N74-21300  
Magnetic drive coupling  
[NASA-CASE-MS-C-21171-1] c 37 N88-23973

## MAGNETIC LENSES

Quadrupole mass filter with means to generate a noise spectrum exclusive of the resonant frequency of the desired ions to deflect stable ions  
[NASA-CASE-XNP-04231] c 14 N73-32325

## MAGNETIC MATERIALS

Low viscosity magnetic fluid obtained by the colloidal suspension of magnetic particles Patent  
[NASA-CASE-XLE-01512] c 12 N70-40124  
Preparation of dilute magnetic semiconductor films by metalorganic chemical vapor deposition  
[NASA-CASE-NPO-17399-1-CU] c 76 N89-14120

## MAGNETIC MEASUREMENT

Cryogenic apparatus for measuring the intensity of magnetic fields  
[NASA-CASE-XAC-02407] c 14 N69-27423  
Wide range linear fluxgate magnetometer Patent  
[NASA-CASE-XGS-01587] c 14 N71-15962  
RC networks and amplifiers employing the same  
[NASA-CASE-XAC-05462-2] c 10 N72-17171  
Magnetometer using superconducting rotating body  
[NASA-CASE-NPO-13388-1] c 35 N76-16390

## MAGNETIC PERMEABILITY

Linear motion valve  
[NASA-CASE-MS-C-20148-1] c 37 N85-29284

## MAGNETIC POLES

Magnetohydrodynamic induction machine  
[NASA-CASE-XNP-07481] c 25 N69-21929  
Mass spectrometer with magnetic pole pieces providing the magnetic fields for both the magnetic sector and an ion-type vacuum pump  
[NASA-CASE-NPO-13663-1] c 35 N77-14406

## MAGNETIC PUMPING

Continuous magnetic flux pump  
[NASA-CASE-XNP-01187] c 15 N73-28516  
Magnetic-flux pump  
[NASA-CASE-XNP-01188] c 15 N73-32361  
Magnetocaloric pump — for cryogenic fluids  
[NASA-CASE-LEW-11672-1] c 37 N74-27904  
Magnetic heat pumping  
[NASA-CASE-LEW-12508-3] c 34 N83-29625

## MAGNETIC RECORDING

Incremental tape recorder and data rate converter Patent  
[NASA-CASE-XNP-02778] c 08 N71-22710  
Magnetic recording head and method of making same Patent  
[NASA-CASE-GSC-10097-1] c 08 N71-27210  
Thermomagnetic recording and magnetic-optic playback system  
[NASA-CASE-NPO-10872-1] c 35 N79-16246

Manganese bismuth films with narrow transfer characteristics for Curie-point switching  
[NASA-CASE-NPO-11336-1] c 76 N79-16678

## MAGNETIC SIGNALS

Plural recorder system  
[NASA-CASE-XMS-06949] c 09 N69-21467

## MAGNETIC STORAGE

Binary magnetic memory device Patent  
[NASA-CASE-XGS-00174] c 08 N70-34743  
Magnetic matrix memory system Patent  
[NASA-CASE-XMF-05835] c 08 N71-12504  
Control apparatus for applying pulses of selectively predetermined duration to a sequence of loads Patent  
[NASA-CASE-XGS-04224] c 10 N71-26418  
Redundant memory organization Patent  
[NASA-CASE-GSC-10564] c 10 N71-29135  
Dual purpose momentum wheels for spacecraft with magnetic recording  
[NASA-CASE-NPO-11481] c 21 N73-13644  
Atomic hydrogen storage method and apparatus  
[NASA-CASE-LEW-12081-1] c 28 N78-24365

## MAGNETIC SUSPENSION

Magnetic suspension and pointing system  
[NASA-CASE-LAR-11889-2] c 37 N78-27424  
Magnetic suspension and pointing system — on a carrier vehicle  
[NASA-CASE-LAR-11889-1] c 35 N79-26372  
Magnetic bearing and motor  
[NASA-CASE-GSC-12726-1] c 37 N83-34323  
Single element magnetic suspension actuator  
[NASA-CASE-LAR-13981-1] c 37 N90-15442

## MAGNETIC SWITCHING

Magnetic power switch Patent  
[NASA-CASE-NPO-10242] c 09 N71-24803  
Current steering switch Patent  
[NASA-CASE-XNP-08567] c 09 N71-26000  
Magnetically switched power supply system for lasers  
[NASA-CASE-NPO-16402-2] c 33 N88-24862

## MAGNETIC TAPE TRANSPORTS

Reel safety brake  
[NASA-CASE-GSC-11960-1] c 37 N77-14479

## MAGNETIC TAPES

Endless tape cartridge Patent  
[NASA-CASE-XGS-00769] c 14 N70-41647  
Endless tape transport mechanism Patent  
[NASA-CASE-XGS-01223] c 07 N71-10609  
Low friction magnetic recording tape Patent  
[NASA-CASE-XGS-00373] c 23 N71-15978  
System for recording and reproducing pulse code modulated data Patent  
[NASA-CASE-XGS-01021] c 08 N71-21042  
Friction measuring apparatus Patent  
[NASA-CASE-NPO-08680] c 14 N71-22995  
Technique for recovery of voice data from heat damaged magnetic tape  
[NASA-CASE-MS-C-14219-1] c 32 N74-27612  
Automatic character skew and spacing checking network — of digital tape drive systems  
[NASA-CASE-GSC-11925-1] c 33 N76-18353  
Braille reading system  
[NASA-CASE-LAR-13306-1] c 82 N87-29372

## MAGNETIC TRANSDUCERS

Magnetometer with a miniature transducer and automatic scanning  
[NASA-CASE-LAR-11617-2] c 35 N78-32397

## MAGNETIZATION

Ion engine casing construction and method of making same Patent  
[NASA-CASE-XNP-06942] c 28 N71-23293

## MAGNETO-OPTICS

Thermomagnetic recording and magneto-optic playback system having constant intensity laser beam control  
[NASA-CASE-NPO-11317-2] c 36 N74-13205

## MAGNETOACOUSTIC WAVES

Magneto acoustic emission apparatus for testing materials for embrittlement  
[NASA-CASE-LAR-13817-1] c 26 N90-21170

## MAGNETOHYDRODYNAMIC FLOW

Magneto-plasma-dynamic arc thruster  
[NASA-CASE-LEW-11180-1] c 25 N73-25760  
Hybrid plume plasma rocket  
[NASA-CASE-MS-C-20476-2] c 20 N89-25279

## MAGNETOHYDRODYNAMIC GENERATORS

Magnetohydrodynamic induction machine  
[NASA-CASE-XNP-07481] c 25 N69-21929  
Slug flow magnetohydrodynamic generator  
[NASA-CASE-XLE-02083] c 03 N69-39983  
Two-fluid magnetohydrodynamic system and method for thermal-electric power conversion Patent  
[NASA-CASE-XNP-00644] c 03 N70-36803  
Crossed-field MHD plasma generator/accelerator Patent  
[NASA-CASE-XLA-03374] c 25 N71-15562  
Solar driven liquid metal MHD power generator  
[NASA-CASE-LAR-12495-1] c 44 N83-28573



## MAGNETOMETERS

- Nonmagnetic thermal motor for a magnetometer  
[NASA-CASE-XAR-03788] c 09 N69-21313
- Cryogenic apparatus for measuring the intensity of magnetic fields  
[NASA-CASE-XAC-02407] c 14 N69-27423
- Flux sensing device using a tubular core with toroidal gating coil and solenoidal output coil wound thereon  
Patent  
[NASA-CASE-XGS-01881] c 09 N70-40123
- Wide range linear fluxgate magnetometer Patent  
[NASA-CASE-XGS-01587] c 14 N71-15862
- Optically pumped resonance magnetometer for determining vectorial components in a spatial coordinate system Patent  
[NASA-CASE-XGS-04879] c 14 N71-20428
- Thermally cycled magnetometer Patent  
[NASA-CASE-XAC-03740] c 14 N71-26135
- Two axis fluxgate magnetometer Patent  
[NASA-CASE-GSC-10441-1] c 14 N71-27325
- Hall effect magnetometer  
[NASA-CASE-LEW-11632-2] c 35 N75-13213
- Magnetometer using superconducting rotating body  
[NASA-CASE-NPO-13388-1] c 35 N76-16390
- Magnetic heading reference  
[NASA-CASE-LAR-11387-1] c 04 N76-20114
- Magnetic heading reference  
[NASA-CASE-LAR-11387-2] c 04 N77-19056
- Magnetometer with a miniature transducer and automatic scanning  
[NASA-CASE-LAR-11617-2] c 35 N78-32397
- Low energy electron magnetometer using a monoenergetic electron beam  
[NASA-CASE-LAR-12706-1] c 35 N84-12444

## MAGNETRON SPUTTERING

- Method of producing high T(subc) superconducting NBN films  
[NASA-CASE-NPO-16681-1-CU] c 76 N88-24543

## MAGNETRONS

- Tuning arrangement for an electron discharge device or the like Patent  
[NASA-CASE-XNP-09771] c 09 N71-24841

## MAGNETS

- Magnetic electrical connectors for biomedical percutaneous implants  
[NASA-CASE-KSC-11030-1] c 52 N77-25772
- Miniature cyclotron resonance ion source using small permanent magnet  
[NASA-CASE-NPO-14324-1] c 72 N80-27163
- Linear magnetic bearing  
[NASA-CASE-GSC-12517-1] c 37 N83-32067
- Shaft transducer having dc output proportional to angular velocity  
[NASA-CASE-NPO-15706-1] c 35 N84-28017
- Linear motion valve  
[NASA-CASE-MSC-20148-1] c 37 N85-29284

## MAGNIFICATION

- Image magnification adapter for cameras Patent  
[NASA-CASE-XMF-03844-1] c 14 N71-26474
- Magnifying scratch gage force transducer  
[NASA-CASE-LAR-10496-1] c 14 N72-22437
- Magnifying image intensifier  
[NASA-CASE-GSC-12010-1] c 74 N78-18905
- Constant magnification optical tracking system  
[NASA-CASE-NPO-14813-1] c 74 N82-24072
- Spectral slicing X-ray telescope with variable magnification  
[NASA-CASE-MFS-25942-1] c 74 N86-20124
- Variable magnification variable dispersion glancing incidence imaging x ray spectroscopic telescope  
[NASA-CASE-MFS-28013-3] c 89 N90-27594
- Multispectral variable magnification glancing incidence x ray telescope  
[NASA-CASE-MFS-28013-4] c 89 N90-27595

## MAGNITUDE

- Balance torque meter Patent  
[NASA-CASE-XGS-01013] c 14 N71-23725

## MAINTENANCE

- Self-testing and repairing computer Patent  
[NASA-CASE-NPO-10567] c 08 N71-24633
- Bonding or repairing process  
[NASA-CASE-MSC-12357] c 15 N73-12489
- Method of repairing discontinuity in fiberglass structures  
[NASA-CASE-LAR-10416-1] c 24 N74-30001
- System and method for refurbishing and processing parachutes — monorial conveyor system  
[NASA-CASE-KSC-11042-2] c 02 N81-26073
- Computer circuit card puller  
[NASA-CASE-FRC-11042-1] c 60 N82-24839
- Method for refurbishing and processing parachutes  
[NASA-CASE-KSC-11042-1] c 09 N82-29330
- Method for repair of thin glass coatings — on space shuttle orbiter tiles  
[NASA-CASE-KSC-11097-1] c 27 N82-33520

- Method of repairing surface damage to porous refractory substrates — space shuttle orbiter tiles  
[NASA-CASE-MSC-18738-1] c 24 N83-13172
- Method of repairing hidden leaks in tubes  
[NASA-CASE-MFS-19786-1] c 37 N86-32736
- High-pressure promoted combustion chamber  
[NASA-CASE-MSC-21470-1] c 09 N90-16771

## MALEATES

- Stabilized unsaturated polyesters  
[NASA-CASE-NPO-16103-1] c 27 N85-29043
- Maleimido substituted aromatic cyclotriphosphazenes  
[NASA-CASE-ARC-11428-1] c 23 N86-19376
- Fire and heat resistant laminating resins based on maleimido substituted aromatic cyclotriphosphazene polymer  
[NASA-CASE-ARC-11428-2] c 27 N87-16909

## MALFUNCTIONS

- Airplane take-off performance indicator Patent  
[NASA-CASE-XLA-00100] c 14 N70-36807

## MAMMALS

- Spiral vane bio reactor  
[NASA-CASE-MSC-21381-1] c 51 N89-25557

## MANAGEMENT METHODS

- Discrete event simulation tool for analysis of qualitative models of continuous processing systems  
[NASA-CASE-MSC-21485-1] c 61 N90-18410

## MANDRELS

- Mandrel for shaping solid propellant rocket fuel into a motor casing Patent  
[NASA-CASE-XLA-00304] c 27 N70-34783
- Rotating mandrel for assembly of inflatable devices Patent  
[NASA-CASE-XLA-04143] c 15 N71-17687
- Method of making a solid propellant rocket motor Patent  
[NASA-CASE-XLA-04126] c 28 N71-26779

## MANEUVERABILITY

- Sequentially deployable maneuverable tetrahedral beam  
[NASA-CASE-LAR-13098-1] c 31 N86-19479

## MANGANESE

- Manganese bismuth films with narrow transfer characteristics for Curie-point switching  
[NASA-CASE-NPO-11336-1] c 76 N79-16678

## MANIFOLDS

- Injector for bipropellant rocket engines Patent  
[NASA-CASE-XMF-00148] c 28 N70-38710
- Active clearance control system for a turbomachine  
[NASA-CASE-LEW-12938-1] c 07 N82-32366
- Collimated beam manifold with the number of output beams variable at a given output angle  
[NASA-CASE-MFS-25312-1] c 74 N83-17305
- Extended temperature range rocket injector  
[NASA-CASE-LEW-14846-1] c 20 N90-15130

## MANIPULATORS

- Remote control manipulator for zero gravity environment  
[NASA-CASE-MFS-14405] c 15 N72-28495
- Orthotic arm joint — for use in mechanical arms  
[NASA-CASE-MFS-21811-1] c 54 N75-12616
- Variable ratio mixed-mode bilateral master-slave control system for shuttle remote manipulator system  
[NASA-CASE-MSC-14245-1] c 18 N75-27041
- Cooperative multiaxis sensor for teleoperation of article manipulating apparatus  
[NASA-CASE-NPO-13386-1] c 54 N75-27758
- Remotely operable articulated manipulator  
[NASA-CASE-MFS-22707-1] c 37 N76-15457
- Remote manipulator system  
[NASA-CASE-MFS-22022-1] c 37 N76-15460
- Anthropomorphic master/slave manipulator system  
[NASA-CASE-ARC-10756-1] c 54 N77-32721
- Wrist joint assembly  
[NASA-CASE-MFS-23311-1] c 54 N78-17676
- Compact artificial hand  
[NASA-CASE-NPO-13906-1] c 54 N79-24652
- Controller arm for a remotely related slave arm  
[NASA-CASE-ARC-11052-1] c 37 N79-28551
- Device for coupling a first vehicle to a second vehicle  
[NASA-CASE-GSC-12429-1] c 37 N81-14320
- Pneumatic inflatable end effector  
[NASA-CASE-MFS-23696-1] c 54 N81-26718
- Terminal guidance sensor system — space shuttle coupling to orbiting satellites  
[NASA-CASE-NPO-14521-1] c 37 N81-27519
- Apparatus for sequentially transporting containers  
[NASA-CASE-MFS-23846-1] c 37 N82-32731
- Precision manipulator heating and cooling apparatus for use in UHV systems with sample transfer capability  
[NASA-CASE-LAR-13040-1] c 37 N85-29286
- Sequentially deployable maneuverable tetrahedral beam  
[NASA-CASE-LAR-13098-1] c 31 N86-19479
- Apparatus for adapting an end effector device remotely controlled manipulator arm  
[NASA-CASE-MFS-25949-1] c 37 N88-19603

- Self-locking telescoping manipulator arm  
[NASA-CASE-MFS-25906-1] c 37 N86-20789
- Magnetic spin reduction system for free spinning objects  
[NASA-CASE-MFS-25966-1] c 16 N86-26352
- Orbital maneuvering and effectors  
[NASA-CASE-MFS-28161-1] c 37 N87-18817
- Space spider crane  
[NASA-CASE-LAR-13411-1-SB] c 18 N88-23828
- Mobile remote manipulator system for a tetrahedral truss  
[NASA-CASE-MSC-20985-1] c 18 N88-26398
- Space station erectable manipulator placement system  
[NASA-CASE-MSC-21096-1] c 18 N89-12621
- Improved docking alignment system  
[NASA-CASE-MSC-21372-1] c 35 N89-12842
- Magnetic attachment mechanism  
[NASA-CASE-MSC-21095-1] c 37 N89-12866
- Robust high-performance control for robotic manipulators  
[NASA-CASE-NPO-17785-1-CU] c 37 N89-28846
- Distributed proximity sensor system  
[NASA-CASE-NPO-17275-1-CU] c 37 N89-29750
- Gripping device  
[NASA-CASE-MSC-21365-1] c 37 N90-20408
- Method and apparatus for configuration control of redundant robots  
[NASA-CASE-NPO-17801-1-CU] c 37 N90-27110

## MANNED ORBITAL LABORATORIES

- Erectable modular space station Patent  
[NASA-CASE-XLA-00678] c 31 N70-34296
- Radial module space station Patent  
[NASA-CASE-XMS-01906] c 31 N70-41373
- Rotating space station simulator Patent  
[NASA-CASE-XLA-03127] c 11 N71-10776

## MANNED SPACE FLIGHT

- Transfer valve Patent  
[NASA-CASE-XAC-01158] c 15 N71-23051
- Air removal device  
[NASA-CASE-XLA-08914] c 15 N73-12492

## MANNED SPACECRAFT

- Space capsule Patent  
[NASA-CASE-XLA-00149] c 31 N70-37938
- Variable-geometry winged reentry vehicle Patent  
[NASA-CASE-XLA-00241] c 31 N70-37986
- Vehicle parachute and equipment jettison system Patent  
[NASA-CASE-XLA-00195] c 02 N70-38009
- Space capsule Patent  
[NASA-CASE-XLA-01332] c 31 N71-15664
- Artificial gravity spin deployment system Patent  
[NASA-CASE-XNP-02595] c 31 N71-21881
- Specialized halogen generator for purification of water Patent  
[NASA-CASE-XLA-08913] c 14 N71-28933
- Collapsible Apollo couch  
[NASA-CASE-MSC-13140] c 05 N72-11085
- Space vehicle with artificial gravity and earth-like environment  
[NASA-CASE-LEW-11101-1] c 31 N73-32750
- Hatch cover  
[NASA-CASE-MSC-21356-1] c 18 N90-19278

## MANOMETERS

- Magnetically centered liquid column float Patent  
[NASA-CASE-XAC-00030] c 14 N70-34820
- Apparatus for absolute pressure measurement  
[NASA-CASE-LAR-10000] c 14 N73-30394

## MANUAL CONTROL

- Multiple circuit switch apparatus with improved pivot actuator structure Patent  
[NASA-CASE-XAC-03777] c 10 N71-15909
- Null device for hand controller Patent  
[NASA-CASE-XLA-01808] c 15 N71-20740
- Manually actuated heat pump  
[NASA-CASE-NPO-10677] c 05 N72-11084
- Numerical computer peripheral interactive device with manual controls  
[NASA-CASE-NPO-11497] c 08 N73-25206
- Solid state controller three axes controller  
[NASA-CASE-MSC-12394-1] c 08 N74-10942
- G-load measuring and indicator apparatus  
[NASA-CASE-ARC-10806-1] c 35 N75-29381
- Hydraulic actuator mechanism to control aircraft spoiler movements through dual input commands  
[NASA-CASE-LAR-12412-1] c 08 N82-24205

## MANUFACTURING

- A method for selective gold diffusion of monolithic silicon devices and/or circuits Patent application  
[NASA-CASE-ERC-10072] c 09 N70-11148
- Indexed keyed connection Patent  
[NASA-CASE-XMS-02532] c 15 N70-41808
- Method of making screen by casting Patent  
[NASA-CASE-XLE-00953] c 15 N71-15966
- Space manufacturing machine Patent  
[NASA-CASE-MFS-20410] c 15 N71-19214

Fluid containers and resealable septum therefor Patent  
[NASA-CASE-NPO-10123] c 15 N71-24835  
Method of making a solid propellant rocket motor Patent  
[NASA-CASE-XLA-04126] c 28 N71-26779  
Method of making shielded flat cable Patent  
[NASA-CASE-MFS-13687] c 09 N71-28691  
Fabrication of controlled-porosity metals Patent  
[NASA-CASE-XNP-04339] c 17 N71-29137  
Method of making porous conductive supports for electrodes — by electroforming and stacking nickel foils  
[NASA-CASE-GSC-11367-1] c 44 N74-19692  
Apparatus for forming drive belts  
[NASA-CASE-NPO-13205-1] c 31 N74-32917  
Bonding method in the manufacture of continuous regression rate sensor devices  
[NASA-CASE-LAR-10337-1] c 24 N75-30260  
Process for fabricating SiC semiconductor devices  
[NASA-CASE-LEW-12094-1] c 76 N76-25049  
Solar hydrogen generator  
[NASA-CASE-LAR-11361-1] c 44 N77-22607  
Method of forming shrink-fit compression seal  
[NASA-CASE-LAR-11563-1] c 37 N77-23482  
Method for making a hot wire anemometer and product thereof  
[NASA-CASE-ARC-10900-1] c 35 N77-24454  
Aluminum or copper substrate panel for selective absorption of solar energy  
[NASA-CASE-MFS-23518-3] c 44 N80-16452  
Polymeric compositions and their method of manufacture — forming filled polymer systems using cryogenics  
[NASA-CASE-NPO-10424-1] c 27 N81-24258  
Inorganic spark chamber frame and method of making the same  
[NASA-CASE-GSC-12354-1] c 35 N82-24471  
Photoelectric detection system — manufacturing automation  
[NASA-CASE-MFS-23776-1] c 33 N82-28545  
Glass heating panels and method for preparing the same from architectural reflective glass  
[NASA-CASE-NPO-15753-1] c 27 N84-33589  
The 1-(diorganooxy phosphonyl) methyl)-2,4- and -2,6-diamino benzenes and their derivatives  
[NASA-CASE-ARC-11425-2] c 23 N87-28605  
New core design for use with precision composite reflectors  
[NASA-CASE-NPO-17858-1-CU] c 24 N90-26880

**MAPPING**  
Random function tracer Patent  
[NASA-CASE-XLA-01401] c 15 N71-21179  
Method and apparatus for mapping planets  
[NASA-CASE-NPO-11001] c 07 N72-21118  
Seismic vibration source  
[NASA-CASE-NPO-14112-1] c 46 N79-22679  
Dual aperture multispectral Schmidt objective  
[NASA-CASE-GSC-12756-1] c 74 N84-23248  
Method and apparatus for contour mapping using synthetic aperture radar  
[NASA-CASE-NPO-15939-1] c 43 N86-19711  
Network of dedicated processors for finding lowest-cost map path  
[NASA-CASE-NPO-17716-1-CU] c 62 N90-10608

**MAPS**  
Orbital and entry tracking accessory for globes — to provide range requirements for reentry vehicles to any landing site  
[NASA-CASE-LAR-10626-1] c 19 N74-21015  
Optical process for producing classification maps from multispectral data  
[NASA-CASE-MS-14472-1] c 43 N77-10584

**MASERS**  
Segmented superconducting magnet for a broadband traveling wave maser Patent  
[NASA-CASE-XGS-10518] c 16 N71-28554  
Maser for frequencies in the 7-20 GHz range  
[NASA-CASE-NPO-11437] c 16 N72-28521  
Reflected-wave maser — low noise amplifier  
[NASA-CASE-NPO-13490-1] c 36 N76-31512  
Multistation refrigeration system  
[NASA-CASE-NPO-13839-1] c 31 N78-25256  
External bulb variable volume maser  
[NASA-CASE-GSC-12334-1] c 36 N79-14362  
Dielectric-loaded waveguide circulator for cryogenically cooled and cascaded maser waveguide structures  
[NASA-CASE-NPO-14254-1] c 36 N80-18372  
Precise RF timing signal distribution to remote stations — fiber optics  
[NASA-CASE-NPO-14749-1] c 32 N81-14186  
Resonant isolator for maser amplifier  
[NASA-CASE-NPO-15201-1] c 36 N83-35350  
Maser cavity servo-tuning system  
[NASA-CASE-NPO-15890-1-CU] c 33 N85-29143

**MASKING**  
Masking device Patent  
[NASA-CASE-XNP-02092] c 15 N70-42033  
High resolution developing of photosensitive resists Patent  
[NASA-CASE-XGS-04993] c 14 N71-17574  
Low defect, high purity crystalline layers grown by selective deposition  
[NASA-CASE-NPO-15813-1] c 76 N85-30922  
Method for maintaining precise suction strip porosities  
[NASA-CASE-LAR-13638-1] c 31 N90-19427

**MASKS**  
Ion beam sputter etching  
[NASA-CASE-LEW-13899-1] c 31 N87-21160

**MASS**  
Mass measuring system Patent  
[NASA-CASE-XMS-03371] c 05 N70-42000  
Dynamic vibration absorber Patent  
[NASA-CASE-LAR-10083-1] c 15 N71-27006  
Fluid mass sensor for a zero gravity environment  
[NASA-CASE-MS-14653-1] c 35 N77-19385

**MASS BALANCE**  
Two-plane balance Patent  
[NASA-CASE-XAC-00073] c 14 N70-34813  
Apparatus for testing a pressure responsive instrument Patent  
[NASA-CASE-XMF-04134] c 14 N71-23755

**MASS DISTRIBUTION**  
Propellant mass distribution metering apparatus Patent  
[NASA-CASE-NPO-10185] c 10 N71-26339

**MASS FLOW**  
Rocket engine injector Patent  
[NASA-CASE-XLE-03157] c 28 N71-24736  
Nuclear mass flowmeter  
[NASA-CASE-MFS-20485] c 14 N72-11365  
Apparatus and method for generating large mass flow of high temperature air at hypersonic speeds  
[NASA-CASE-LAR-10578-1] c 12 N73-25262

**MASS SPECTROMETERS**  
Analytical photoionization mass spectrometer with an argon gas filter between the light source and monochromator Patent  
[NASA-CASE-LAR-10180-1] c 06 N71-13461  
Time of flight mass spectrometer with feedback means from the detector to the low source and a specific counter Patent  
[NASA-CASE-XNP-01056] c 14 N71-23041  
Ion microprobe mass spectrometer for analyzing fluid materials Patent  
[NASA-CASE-ERC-10014] c 14 N71-28863  
Orifice gross leak tester Patent  
[NASA-CASE-ERC-10150] c 14 N71-28992  
Method and apparatus for determining the contents of contained gas samples  
[NASA-CASE-GSC-10903-1] c 14 N73-12444  
Quadrupole mass filter with means to generate a noise spectrum exclusive of the resonant frequency of the desired ions to deflect stable ions  
[NASA-CASE-XNP-04231] c 14 N73-32325  
Fast scan control for deflection type mass spectrometers  
[NASA-CASE-LAR-11428-1] c 35 N74-34857  
Mass spectrometer with magnetic pole pieces providing the magnetic fields for both the magnetic sector and an ion-type vacuum pump  
[NASA-CASE-NPO-13663-1] c 35 N77-14406  
Method for fabricating a mass spectrometer inlet leak  
[NASA-CASE-GSC-12077-1] c 35 N77-24455  
Dual acting slit control mechanism  
[NASA-CASE-LAR-11370-1] c 35 N80-28686  
Ion mass spectrometer  
[NASA-CASE-NPO-15423-1] c 35 N84-28016  
Apparatus and method for characterizing the transmission efficiency of a mass spectrometer  
[NASA-CASE-NPO-16989-1-CU] c 35 N89-28794

**MASS SPECTROSCOPY**  
Moving particle composition analyzer  
[NASA-CASE-GSC-11889-1] c 35 N76-16393  
Fluid sampling device  
[NASA-CASE-GSC-12143-1] c 35 N77-32456  
Particle analyzing method and apparatus  
[NASA-CASE-NPO-15292-1] c 35 N83-27184

**MASSIVELY PARALLEL PROCESSORS**  
Massively parallel processor computer  
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[NASA-CASE-LEW-14848-1] c 14 N89-28549

Acetylene terminated aspartimides and resins therefrom  
[NASA-CASE-LAR-14188-1] c 27 N90-23545

Silicon containing electroconductive polymers and structures made therefrom  
[NASA-CASE-NPO-17826-1-CU] c 27 N90-26952

A tough performance simultaneous semi-interpenetrating polymer network  
[NASA-CASE-LAR-14339-1] c 27 N90-26955

**MECHANICS (PHYSICS)**

Gravity stabilized flying vehicle Patent  
[NASA-CASE-MSC-12111-1] c 02 N71-11039

**MECHANIZATION**

Machine for use in monitoring fatigue life for a plurality of elastomeric specimens  
[NASA-CASE-NPO-13731-1] c 39 N78-10493

**MEDICAL ELECTRONICS**

Circuit for detecting initial systole and diastolic notch — for monitoring arterial pressure  
[NASA-CASE-LEW-11581-1] c 54 N75-13531

Pocket ECG electrode  
[NASA-CASE-ARC-11258-1] c 52 N80-33081

Subcutaneous electrode structure  
[NASA-CASE-ARC-11117-1] c 52 N81-14612

**MEDICAL EQUIPMENT**

Biomedical electrode arrangement Patent  
[NASA-CASE-XFR-10856] c 05 N71-11189

Method and system for respiration analysis Patent  
[NASA-CASE-XFR-08403] c 05 N71-11202

Laser machining apparatus Patent  
[NASA-CASE-HQN-10541-2] c 15 N71-27135

Telemetry actuated switch  
[NASA-CASE-ARC-10105] c 09 N72-17153

Tilting table for ergometer and for other biomedical devices  
[NASA-CASE-MFS-21010-1] c 05 N73-30078

Automatic instrument for chemical processing to detect microorganism in biological samples by measuring light reactions  
[NASA-CASE-GSC-11169-2] c 05 N73-32011

Servo-controlled intravitral microscope system  
[NASA-CASE-NPO-13214-1] c 35 N75-25123

Heat sterilizable patient ventilator  
[NASA-CASE-NPO-13313-1] c 54 N75-27761

Medical subject monitoring systems — multichannel monitoring systems  
[NASA-CASE-MSC-14180-1] c 52 N76-14757

Locking mechanism for orthopedic braces  
[NASA-CASE-GSC-12082-1] c 54 N76-22914

Readout electrode assembly for measuring biological impedance  
[NASA-CASE-ARC-10816-1] c 35 N76-24525

Corneal seal device  
[NASA-CASE-LEW-12258-1] c 52 N77-28716

Snap-in compressible biomedical electrode  
[NASA-CASE-MSC-14623-1] c 52 N77-28717

Tissue macerating instrument  
[NASA-CASE-LEW-12668-1] c 52 N78-14773

Flow compensating pressure regulator  
[NASA-CASE-LEW-12718-1] c 34 N78-25351

Intra-ocular pressure normalization technique and equipment  
[NASA-CASE-LEW-12723-1] c 52 N80-18690

Micro-fluid exchange coupling apparatus  
[NASA-CASE-ARC-11114-1] c 51 N81-14605

Urine collection device  
[NASA-CASE-MSC-16433-1] c 52 N81-24711

Spine immobilization apparatus  
[NASA-CASE-ARC-11167-1] c 52 N81-25662

Cervix-to-rectum measuring device in a radiation applicator for use in the treatment of cervical cancer  
[NASA-CASE-GSC-12081-2] c 52 N82-22875

Acoustic tooth cleaner  
[NASA-CASE-LAR-12471-1] c 52 N82-29862

Ion beam sputter-etched ventricular catheter for hydrocephalus shunt  
[NASA-CASE-LEW-13107-1] c 52 N83-21785

System and method for moving a probe to follow movements of tissue  
[NASA-CASE-NPO-15197-1] c 52 N83-25346

Medical clip  
[NASA-CASE-LAR-12650-1] c 52 N84-28388

Process of making medical clip  
[NASA-CASE-LAR-12650-2] c 52 N84-28389

Drop foot corrective device  
[NASA-CASE-LAR-12259-2] c 54 N86-22112

**MELTING**

Hot melt recharge system — repairing damaged or missing tiles on space shuttle orbiter  
[NASA-CASE-LAR-12881-1] c 27 N84-14323

Hot melt adhesive attachment pad  
[NASA-CASE-LAR-12894-1] c 27 N85-20125

Method of preparing radially homogeneous mercury cadmium telluride crystals  
[NASA-CASE-MFS-25786-2] c 76 N90-20896

Pressure rig for repetitive casting  
[NASA-CASE-LAR-14050-1] c 31 N90-21216

**MELTING POINTS**

Mixed diamines for lower melting addition polyimide preparation and utilization  
[NASA-CASE-LAR-12054-1] c 27 N79-33316

Low thrust monopropellant engine  
[NASA-CASE-GSC-12194-2] c 20 N82-18314

**MELTS (CRYSTAL GROWTH)**

Growth of silicon carbide crystals on a seed while pulling silicon crystals from a melt  
[NASA-CASE-NPO-13969-1] c 76 N79-23798

- Preparation of monotectic alloys having a controlled microstructure by directional solidification under dopant-induced interface breakdown  
[NASA-CASE-MFS-23816-1] c 26 N80-23419
- Means for growing ribbon crystals without subjecting the crystals to thermal shock-induced strains  
[NASA-CASE-NPO-14298-1] c 76 N80-32244
- Apparatus for use in the production of ribbon-shaped crystals from a silicon melt  
[NASA-CASE-NPO-14297-1] c 33 N81-19389
- Electromigration process for the purification of molten silicon during crystal growth  
[NASA-CASE-NPO-14831-1] c 76 N82-30105
- Controlled in situ etch-back  
[NASA-CASE-NPO-15625-1] c 76 N83-20789
- Apparatus and method for heating a material in a transparent ampoule — crystal growth  
[NASA-CASE-MFS-25436-1] c 27 N83-36220
- Process and apparatus for growing a crystal ribbon  
[NASA-CASE-NPO-15628-1] c 76 N84-35113
- Ribbon growing method and apparatus  
[NASA-CASE-NPO-16306-1-CU] c 76 N85-30934
- Containerless high purity pulling process and apparatus for glass fiber  
[NASA-CASE-MFS-25905-2] c 31 N86-21718
- High-temperature, high-pressure optical cell  
[NASA-CASE-MFS-26000-1] c 74 N87-14971
- Total immersion crystal growth  
[NASA-CASE-NPO-15800-2] c 76 N87-23286
- MEMBRANE STRUCTURES**
- Liquid junction and method of fabricating the same Patent Application  
[NASA-CASE-NPO-10682] c 15 N70-34699
- Measuring device Patent  
[NASA-CASE-XMS-01546] c 14 N70-40233
- Flexible composite membrane Patent  
[NASA-CASE-XNP-08837] c 18 N71-16210
- Fluid impervious barrier including liquid metal alloy and method of making same Patent  
[NASA-CASE-XNP-08891] c 17 N71-28747
- Meteoroid capture cell construction  
[NASA-CASE-MS-C-12423-1] c 91 N76-30131
- Strong thin membrane structure — solar sails  
[NASA-CASE-NPO-14021-2] c 27 N80-16163
- In-situ cross linking of polyvinyl alcohol — application to battery separator films  
[NASA-CASE-LEW-13135-2] c 27 N81-24257
- Separator for alkaline batteries and method of making same  
[NASA-CASE-GSC-10350-1] c 44 N82-24642
- Separator for alkaline electric batteries and method of making  
[NASA-CASE-GSC-10018-1] c 44 N82-24644
- MEMBRANES**
- Apparatus for measuring swelling characteristics of membranes  
[NASA-CASE-XGS-03865] c 14 N69-21363
- Mixture separation cell Patent  
[NASA-CASE-XMS-02952] c 18 N71-20742
- Ionene membrane separator  
[NASA-CASE-NPO-11091] c 18 N72-22567
- Dual membrane hollow fiber fuel cell and method of operating same  
[NASA-CASE-NPO-13732-1] c 44 N79-10513
- Microelectrophoretic apparatus and process  
[NASA-CASE-ARC-11121-1] c 25 N79-14169
- Dialysis system — using ion exchange resin membranes permeable to urea molecules  
[NASA-CASE-NPO-14101-1] c 52 N80-14687
- Reverse osmosis membrane of high urea rejection properties — water purification  
[NASA-CASE-ARC-10980-1] c 27 N80-23452
- Membrane consisting of polyquaternary amine ion exchange polymer network interpenetrating the chains of thermoplastic matrix polymer  
[NASA-CASE-NPO-14001-1] c 27 N81-14076
- Air removal device — life support systems  
[NASA-CASE-XLA-08914-2] c 25 N82-21269
- Process of treating cellulosic membrane and alkaline with membrane separator  
[NASA-CASE-GSC-10019-1] c 44 N82-24641
- Aqueous alkali metal hydroxide insoluble cellulose ether membrane  
[NASA-CASE-XGS-05584-1] c 25 N82-29370
- Optical fiber tactile sensor  
[NASA-CASE-NPO-15375-1] c 74 N84-11921
- Method for the preparation of thin-skinned asymmetric reverse osmosis membranes and products thereof  
[NASA-CASE-ARC-11359-1] c 51 N84-28361
- Method of forming dynamic membrane on stainless steel support  
[NASA-CASE-MS-C-18172-3] c 31 N88-29052
- Adjustable choke for fluids nozzle  
[NASA-CASE-NPO-17625-1-CU] c 34 N90-27070

**MEMORY**

- Method for making conductors for ferrite memory arrays — from pre-formed metal conductors  
[NASA-CASE-LAR-10994-1] c 24 N75-13032
- Thermocouple for heating and cooling of memory metal actuators  
[NASA-CASE-NPO-17068-1-CU] c 35 N88-29151
- MEMORY (COMPUTERS)**
- Automatic multi-banking of memory for microprocessors  
[NASA-CASE-NPO-15295-1] c 60 N85-21992
- Real-time garbage collection for list processing  
[NASA-CASE-MS-C-20964-1] c 60 N87-14863
- Hybrid analog-digital associative neural network  
[NASA-CASE-NPO-17058-1-CU] c 62 N87-25803
- A method of up-front load balancing for local memory parallel processors  
[NASA-CASE-MS-C-21348-1] c 62 N89-24084
- Bus programmable slave module  
[NASA-CASE-MS-C-21387-1] c 61 N90-16411
- Analog hardware for delta-backpropagation neural networks  
[NASA-CASE-NPO-17564-1-CU] c 32 N90-16974
- Solid state electrical switch employing materials with reversible phase transistors  
[NASA-CASE-NPO-17621-1-CU] c 33 N90-17010

**MERCURY (METAL)**

- Mercury capillary interrupter Patent  
[NASA-CASE-XNP-02251] c 12 N71-20896
- Method of forming ceramic to metal seal Patent  
[NASA-CASE-XNP-01263-2] c 15 N71-26312
- Feed system for an ion thruster  
[NASA-CASE-NPO-10737] c 28 N72-11709

**MERCURY CADMIUM TELLURIDES**

- Method of preparing radially homogeneous mercury cadmium telluride crystals  
[NASA-CASE-MFS-25786-2] c 76 N90-20896

**MERCURY VAPOR**

- Mercury capillary interrupter Patent  
[NASA-CASE-XNP-02251] c 12 N71-20896
- Rotating shaft seal Patent  
[NASA-CASE-XNP-02862-1] c 15 N71-26294

**MESSAGE PROCESSING**

- Method for Viterbi decoding of large constraint length convolutional codes  
[NASA-CASE-NPO-17310-1-CU] c 17 N88-28946

**METABOLIC WASTES**

- Cooling system for removing metabolic heat from an hermetically sealed spacesuit  
[NASA-CASE-ARC-11059-1] c 54 N78-32721
- Method and automated apparatus for detecting coliform organisms  
[NASA-CASE-MS-C-16777-1] c 51 N80-27067

**METABOLISM**

- Automated analysis of oxidative metabolites  
[NASA-CASE-ARC-10469-1] c 25 N75-12086
- Process for control of cell division  
[NASA-CASE-LAR-10773-3] c 51 N77-25769
- Metabolic rate meter and method  
[NASA-CASE-MS-C-12239-1] c 52 N79-21750

**METAL BONDING**

- Bonding thermoelectric elements to nonmagnetic refractory metal electrodes  
[NASA-CASE-XGS-04554] c 15 N69-39786
- Method of making a diffusion bonded refractory coating Patent  
[NASA-CASE-XLE-01604-2] c 15 N71-15610
- Metal valve pintle with encapsulated elastomeric body Patent  
[NASA-CASE-MS-C-12116-1] c 15 N71-17648
- Apparatus for the determination of the existence or non-existence of a bonding between two members Patent  
[NASA-CASE-MFS-13686] c 15 N71-18132
- Soldering with solder flux which leaves corrosion resistant coating Patent  
[NASA-CASE-NXP-03459] c 15 N71-21078
- Bonded elastomeric seal for electrochemical cells Patent  
[NASA-CASE-XGS-02631] c 03 N71-23006
- Silicon solar cell with cover glass bonded to cell by metal pattern Patent  
[NASA-CASE-XLE-08569] c 03 N71-23449
- Positive contact resistance soldering unit  
[NASA-CASE-KSC-10242] c 15 N72-23497
- Bonding or repairing process  
[NASA-CASE-MS-C-12357] c 15 N73-12489
- Totally confined explosive welding — apparatus to reduce noise level and protect personnel during explosive bonding  
[NASA-CASE-LAR-10941-1] c 37 N74-21057
- Ultrasonically bonded valve assembly  
[NASA-CASE-NPO-13360-1] c 37 N75-25185
- Bimetallic junctions  
[NASA-CASE-LEW-11573-1] c 26 N77-28265

- Heat exchanger and method of making — bonding rocket chambers with a porous metal matrix  
[NASA-CASE-LEW-12441-1] c 34 N79-13289
- Totally confined explosive welding  
[NASA-CASE-LAR-10941-2] c 37 N79-13384
- Method and apparatus for holding two separate metal pieces together for welding  
[NASA-CASE-GSC-12318-1] c 37 N80-23655
- Heat exchanger and method of making — rocket lining  
[NASA-CASE-LEW-12441-2] c 34 N80-24573
- Aluminum ion-containing polyimide adhesives  
[NASA-CASE-LAR-12640-1] c 27 N82-11206
- Thermal barrier coating system having improved adhesion  
[NASA-CASE-LEW-1335901] c 27 N83-31855
- Impacting device for testing insulation  
[NASA-CASE-MFS-25862-2] c 37 N84-33807
- Method of coating a substrate with a rapidly solidified metal  
[NASA-CASE-GSC-12880-1] c 26 N88-32550
- Composite piston  
[NASA-CASE-LAR-13435-1] c 37 N88-23981

**METAL COATINGS**

- Method of joining aluminum to stainless steel Patent  
[NASA-CASE-MFS-07369] c 15 N71-20443
- Soldering with solder flux which leaves corrosion resistant coating Patent  
[NASA-CASE-XNP-03459] c 15 N71-21078
- Thermal control coating Patent  
[NASA-CASE-XLA-01995] c 18 N71-23047
- Trialkyl-dihalotantalum and niobium compounds Patent  
[NASA-CASE-XNP-04023] c 06 N71-28808
- Silicide coatings for refractory metals Patent  
[NASA-CASE-XLE-10910] c 18 N71-29040
- Selective nickel deposition  
[NASA-CASE-LEW-10965-1] c 15 N72-25452
- Wide temperature range electronic device with lead attachment  
[NASA-CASE-ERC-10224-2] c 09 N73-27150
- Panel for selectively absorbing solar thermal energy and the method of producing said panel  
[NASA-CASE-MFS-22562-1] c 44 N76-14595
- Ultraviolet light reflective coating  
[NASA-CASE-GSC-11786-1] c 24 N76-24363
- Metallic hot wire anemometer — for high speed wind tunnel tests  
[NASA-CASE-ARC-10911-1] c 35 N77-20400
- Solar cell collector  
[NASA-CASE-LEW-12552-1] c 44 N78-25527
- Electromagnetic radiation energy arrangement — coatings for solar energy absorption and infrared reflection  
[NASA-CASE-WOO-00428-1] c 32 N79-19186
- Electrodes for solid state devices  
[NASA-CASE-NPO-15161-1] c 33 N84-16456
- Corrosion resistant coating  
[NASA-CASE-NPO-15928-1] c 26 N85-29005
- Method of coating a substrate with a rapidly solidified metal  
[NASA-CASE-GSC-12880-1] c 26 N88-32550
- Nickel base coating alloy  
[NASA-CASE-LEW-13834-1] c 26 N87-14482
- Seamless metal-clad fiber-reinforced organic matrix composite structures and process for their manufacture  
[NASA-CASE-LAR-13562-1] c 24 N87-18613
- Method for forming hermetic seals  
[NASA-CASE-NPO-16423-1-CU] c 37 N87-21334

**METAL COMPOUNDS**

- Phthalocyanine polymers  
[NASA-CASE-ARC-11413-1] c 27 N85-21348

**METAL CUTTING**

- Metal shearing energy absorber  
[NASA-CASE-HQN-10638-1] c 15 N73-30460
- Vee-notching device — with adjustable carriage  
[NASA-CASE-MFS-20730-1] c 39 N74-13131
- Hole cutter — drill bits and rotating shaft  
[NASA-CASE-MFS-22649-1] c 37 N75-25186
- Method and tool for machining a transverse slot about a bore  
[NASA-CASE-LAR-11855-1] c 37 N81-14319

**METAL FATIGUE**

- Method for alleviating thermal stress damage in laminates  
[NASA-CASE-LEW-12493-2] c 24 N81-26179
- Directional solidification of superalloys  
[NASA-CASE-MFS-28314-1] c 26 N90-15227

**METAL FIBERS**

- Lightweight electrically-powered flexible thermal laminate — made of metal and nonconductive yarns  
[NASA-CASE-MS-C-12662-1] c 33 N79-12331

**METAL FILMS**

- Means and methods of depositing thin films on substrates Patent  
[NASA-CASE-XNP-00595] c 15 N70-34967

- Metallic film diffusion for boundary lubrication Patent  
[NASA-CASE-XLE-01765] c 18 N71-10772
- Bismuth-lead coatings for gas bearings used in atmospheric environments and vacuum chambers Patent  
[NASA-CASE-XGS-02011] c 15 N71-20739
- Metallic film diffusion for boundary lubrication Patent  
[NASA-CASE-XLE-10337] c 15 N71-24046
- Magnetic recording head and method of making same Patent  
[NASA-CASE-GSC-10097-1] c 08 N71-27210
- Light regulator  
[NASA-CASE-LAR-10836-1] c 26 N72-27784
- Deposition of alloy films — on irregularly shaped metal object  
[NASA-CASE-LEW-11262-1] c 27 N74-13270
- Multitarget sequential sputtering apparatus  
[NASA-CASE-NPO-13345-1] c 37 N75-19684
- Method of forming metal hydride films  
[NASA-CASE-LEW-12083-1] c 37 N78-13436
- Thin film strain transducer  
[NASA-CASE-WLP-10055-1] c 35 N84-28015
- Fire blocking systems for aircraft seat cushions  
[NASA-CASE-ARC-11423-1] c 03 N84-33394
- Glass heating panels and method for preparing the same from architectural reflective glass  
[NASA-CASE-NPO-15753-1] c 27 N84-33589
- Method for forming hermetic seals  
[NASA-CASE-NPO-16423-1-CU] c 37 N87-21334

**METAL FINISHING**

- Selective plating of etched circuits without removing previous plating Patent  
[NASA-CASE-XGS-03120] c 15 N71-24047
- Surface finishing — for aircraft wings  
[NASA-CASE-MSC-12631-1] c 24 N77-28225

**METAL FOILS**

- Folding apparatus Patent  
[NASA-CASE-XLA-00137] c 15 N70-33180
- Thermal control of space vehicles Patent  
[NASA-CASE-XLA-01291] c 33 N70-36617
- Thermal radiation shielding Patent  
[NASA-CASE-XLE-03432] c 33 N71-24145
- Method of making porous conductive supports for electrodes — by electroforming and stacking nickel foils  
[NASA-CASE-GSC-11367-1] c 44 N74-19692
- Method and apparatus for tensile testing of metal foil  
[NASA-CASE-LAR-10208-1] c 35 N78-18400
- Hot foil transducer skin friction sensor  
[NASA-CASE-LAR-12321-1] c 35 N82-24470
- High temperature insulation barrier composite  
[NASA-CASE-MFS-29241-1] c 24 N90-23480

**METAL FUELS**

- Preparing oxidizer coated metal fuel particles  
[NASA-CASE-NPO-11975-1] c 28 N74-33209

**METAL HALIDES**

- Process for making anhydrous metal halides  
[NASA-CASE-LEW-11860-1] c 37 N76-18458
- Direct current ballast circuit for metal halide lamp  
[NASA-CASE-MSC-18407-1] c 33 N82-24427
- High power metallic halide laser — amplifying a copper chloride laser  
[NASA-CASE-NPO-14782-1] c 36 N82-28616
- Method and apparatus for convection control of metallic halide vapor density in a metallic halide laser  
[NASA-CASE-NPO-15021-1] c 36 N83-10417

**METAL HYDRIDES**

- Method of forming metal hydride films  
[NASA-CASE-LEW-12083-1] c 37 N78-13436

**METAL IONS**

- Metal containing polymers from cyclic tetrameric phenylphosphonitrimides Patent  
[NASA-CASE-HQN-10364] c 06 N71-27363
- Aluminum ion-containing polyimide adhesives  
[NASA-CASE-LAR-12640-1] c 27 N82-11206
- Process for improving mechanical properties of epoxy resins by addition of cobalt ions  
[NASA-CASE-LAR-13230-1] c 24 N84-34571

**METAL JOINTS**

- Cryogenic connector for vacuum use Patent  
[NASA-CASE-XGS-02441] c 15 N70-41629
- Mechanical bonding of metal method  
[NASA-CASE-LEW-12941-1] c 26 N83-10170
- X-ray determination of parts alignment  
[NASA-CASE-MSC-20418-1] c 74 N86-20126

**METAL MATRIX COMPOSITES**

- Reinforced metallic composites Patent  
[NASA-CASE-XLE-02428] c 17 N70-33288
- Process for producing dispersion strengthened nickel with aluminum Patent  
[NASA-CASE-XLE-06969] c 17 N71-24142
- Self-lubricating gears and other mechanical parts Patent  
[NASA-CASE-MFS-14971] c 15 N71-24984
- Refractory metal base alloy composites  
[NASA-CASE-XLE-03940-2] c 17 N72-28536

- Method of preparing graphite reinforced aluminum composite  
[NASA-CASE-MFS-21077-1] c 24 N75-28135
- Method of making reinforced composite structure  
[NASA-CASE-LEW-12619-1] c 24 N77-19171
- Heat exchanger and method of making — bonding rocket chambers with a porous metal matrix  
[NASA-CASE-LEW-12441-1] c 34 N78-13289
- Preparation of monotectic alloys having a controlled microstructure by directional solidification under dopant-induced interface breakdown  
[NASA-CASE-MFS-23816-1] c 26 N80-23419
- Heat exchanger and method of making — rocket lining  
[NASA-CASE-LEW-12441-2] c 34 N80-24573
- Method for alleviating thermal stress damage in laminates — metal matrix composites  
[NASA-CASE-LEW-12493-1] c 24 N81-17170
- Method for alleviating thermal stress damage in laminates  
[NASA-CASE-LEW-12493-2] c 24 N81-26179
- Fuselage structure using advanced technology fiber reinforced composites  
[NASA-CASE-LAR-11688-1] c 24 N82-26384
- Metal matrix composite structural panel construction  
[NASA-CASE-LAR-12807-1] c 24 N84-11214
- Arc spray fabrication of metal matrix composite monotype  
[NASA-CASE-LEW-13828-1] c 24 N85-30027
- Seamless metal-clad fiber-reinforced organic matrix composite structures and process for their manufacture  
[NASA-CASE-LAR-13562-1] c 24 N87-18613

**METAL OXIDE SEMICONDUCTORS**

- Gyator employing field effect transistors  
[NASA-CASE-MFS-21433] c 09 N73-20232
- Radiation hardening of MOS devices by boron — for stabilizing gate threshold potential of field effect device  
[NASA-CASE-GSC-11425-1] c 76 N74-20329
- Integrated P-channel MOS gyator  
[NASA-CASE-MFS-22343-1] c 33 N74-34638
- Radiation hardening of MOS devices by boron — for stabilizing gate threshold potential  
[NASA-CASE-GSC-11425-2] c 76 N75-25730
- Solar cell collector  
[NASA-CASE-LEW-12552-1] c 44 N78-25527
- Multilevel metallization method for fabricating a metal oxide semiconductor device  
[NASA-CASE-MFS-23541-1] c 76 N79-14906
- Method of making V-MOS field effect transistors utilizing a two-step anisotropic etching and ion implantation  
[NASA-CASE-GSC-12515-1] c 33 N81-26360
- Schottky barrier solar cell  
[NASA-CASE-NPO-13689-2] c 44 N81-29525
- High voltage v-groove solar cell  
[NASA-CASE-LEW-13401-2] c 44 N83-32177
- GaAs Schottky barrier photo-responsive device and method of fabrication  
[NASA-CASE-GSC-12816-1] c 76 N86-20150
- Integrated photo-responsive metal oxide semiconductor circuit  
[NASA-CASE-GSC-12782-1] c 33 N88-14271

**METAL OXIDES**

- Process for producing dispersion strengthened nickel with aluminum Patent  
[NASA-CASE-XLE-06969] c 17 N71-24142
- Photoetching of metal-oxide layers  
[NASA-CASE-ERC-10108] c 06 N72-21094
- Production of metal powders  
[NASA-CASE-XLE-06461] c 17 N72-22530
- Method for obtaining oxygen from lunar or similar soil  
[NASA-CASE-MSC-12408-1] c 46 N74-13011
- Method for depositing an oxide coating  
[NASA-CASE-LEW-13131-1] c 44 N83-10494
- Method of forming oxide coatings — for solar collector heating panels  
[NASA-CASE-LEW-13132-1] c 27 N83-29388
- Absorbable-susceptor joining of ceramic surfaces  
[NASA-CASE-NPO-15640-1] c 27 N84-22748
- Thermal barrier coating system  
[NASA-CASE-LEW-13324-2] c 24 N85-21268
- Apparatus for producing oxidation protection coatings for polymers  
[NASA-CASE-LEW-14072-2] c 27 N86-32569
- Oxidation protection coatings for polymers  
[NASA-CASE-LEW-14072-3] c 27 N87-23736

**METAL PARTICLES**

- Slug flow magnetohydrodynamic generator  
[NASA-CASE-XLE-02083] c 03 N69-39983
- Method of making a cermet Patent  
[NASA-CASE-LEW-10219-1] c 18 N71-28729
- Preparing oxidizer coated metal fuel particles  
[NASA-CASE-NPO-11975-1] c 28 N74-33209

**METAL PLATES**

- Detector panels-micrometeoroid impact Patent  
[NASA-CASE-XLA-05906] c 31 N71-16221

- Nuclear fuel elements  
[NASA-CASE-XLE-00209] c 22 N73-32528
- Strain arrestor plate for fused silica tile — bonding of thermal insulation to metallic plates or structural parts  
[NASA-CASE-MSC-14182-1] c 27 N76-14264
- Heat treat fixture and method of heat treating  
[NASA-CASE-LAR-11821-1] c 26 N80-28492
- Multicolor printing plate joining  
[NASA-CASE-LEW-13598-1] c 35 N84-22930
- High effectiveness contour matching contact heat exchanger  
[NASA-CASE-MSC-20840-1] c 34 N88-29132

**METAL POWDER**

- Method of producing refractory bodies having controlled porosity Patent  
[NASA-CASE-LEW-10393-1] c 17 N71-15468
- Sealing member and combination thereof and method of producing said sealing member Patent  
[NASA-CASE-XMS-01625] c 15 N71-23022
- Shock tube powder dispersing apparatus Patent  
[NASA-CASE-XLE-04946] c 17 N71-24911
- Preparation of high purity copper fluoride  
[NASA-CASE-LEW-10794-1] c 06 N72-17093
- Production of metal powders  
[NASA-CASE-XLE-06461] c 17 N72-22530
- Apparatus for producing metal powders  
[NASA-CASE-XLE-06461-2] c 17 N72-28535
- Peen plating  
[NASA-CASE-GSC-11163-1] c 15 N73-32360
- Electrodes for solid state devices  
[NASA-CASE-NPO-15161-1] c 33 N84-16456

**METAL SHEETS**

- Light shield and infrared reflector for fatigue testing Patent  
[NASA-CASE-XLA-01782] c 14 N71-26136
- Method of making pressure tight seal for super alloy  
[NASA-CASE-LAR-10170-1] c 37 N74-11301
- Method of making an explosively welded scarf joint  
[NASA-CASE-LAR-11211-1] c 37 N75-12326
- Process for making sheets with parallel pores of uniform size  
[NASA-CASE-GSC-10984-1] c 37 N75-26371
- Apparatus for welding sheet material — butt joints  
[NASA-CASE-XMS-01330] c 37 N75-27376
- Method of bonding plasticized elastomer to metal and articles produced thereby  
[NASA-CASE-MFS-25181-1] c 27 N82-24340
- Curved cap corrugated sheet  
[NASA-CASE-LAR-12884-1] c 18 N84-33450

**METAL SHELLS**

- Shell tile thermal protection system  
[NASA-CASE-LAR-12862-1] c 27 N84-27886

**METAL SPINNING**

- Spin forming tubular elbows Patent  
[NASA-CASE-XMF-01083] c 15 N71-22723

**METAL SPRAYING**

- Method of coating a substrate with a rapidly solidified metal  
[NASA-CASE-GSC-12880-1] c 26 N86-32550

**METAL STRIPS**

- Formed metal ribbon wrap Patent  
[NASA-CASE-XLE-00164] c 15 N70-36411
- Interconnection of solar cells Patent  
[NASA-CASE-XGS-01475] c 03 N71-11058
- Method of making tubes Patent  
[NASA-CASE-XGS-04175] c 15 N71-18579
- High speed shutter — electrically actuated ribbon loop for shuttering optical or fluid passageways  
[NASA-CASE-ARC-10516-1] c 70 N74-21300
- Method for maintaining precise suction strip porosities  
[NASA-CASE-LAR-13638-1] c 31 N90-19427

**METAL SURFACES**

- Condenser - Separator  
[NASA-CASE-XLA-08645] c 15 N69-21465
- Plating nickel on aluminum castings Patent  
[NASA-CASE-XNP-04148] c 17 N71-24830
- Process for applying black coating to metals Patent  
[NASA-CASE-XLA-06199] c 15 N71-24875
- Process for reducing secondary electron emission Patent  
[NASA-CASE-XNP-09469] c 24 N71-25555
- Method of forming ceramic to metal seal Patent  
[NASA-CASE-XNP-01263-2] c 15 N71-26312
- Temperature reducing coating for metals subject to flame exposure Patent  
[NASA-CASE-XLE-00035] c 33 N71-29151
- Thin film gauge — for measuring convective heat transfer rates along test surfaces in wind tunnels  
[NASA-CASE-NPO-10617-1] c 35 N74-22095
- Surface finishing  
[NASA-CASE-MSC-12631-3] c 27 N81-14077
- Improved refractory coatings — sputtered coatings on substrates that form stable nitrides  
[NASA-CASE-LEW-23169-2] c 26 N81-16209
- Method of cold welding using ion beam technology  
[NASA-CASE-LEW-12982-1] c 37 N81-19455



Corrosion resistant thermal barrier coating — protecting gas turbines and other engine parts  
[NASA-CASE-LEW-13088-1] c 26 N81-25188  
Coating with overlay metallic-cermet alloy systems  
[NASA-CASE-LEW-13639-2] c 26 N84-27855  
Method for forming hermetic seals  
[NASA-CASE-NPO-16423-1-CU] c 37 N87-21334  
Ion-beam nitriding of steels  
[NASA-CASE-LEW-14104-2] c 26 N88-14179  
Arc-textured high emittance radiator surfaces  
[NASA-CASE-LEW-14679-1] c 27 N89-28651

**METAL VAPOR LASERS**

High power metallic halide laser — amplifying a copper chloride laser  
[NASA-CASE-NPO-14782-1] c 36 N82-28616  
Method and apparatus for convection control of metallic halide vapor density in a metallic halide laser  
[NASA-CASE-NPO-15021-1] c 36 N83-10417

**METAL VAPORS**

Slug flow magnetohydrodynamic generator  
[NASA-CASE-XLE-02083] c 03 N69-39983  
Apparatus for making a metal slurry product Patent  
[NASA-CASE-XLE-00010] c 15 N70-33382  
Inert gas metallic vapor laser  
[NASA-CASE-NPO-13449-1] c 36 N75-32441  
Isotope separation using metallic vapor lasers  
[NASA-CASE-NPO-13550-1] c 36 N77-26477

**METAL WORKING**

Electric arc welding Patent  
[NASA-CASE-XMF-00392] c 15 N70-34814  
Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMF-05114] c 15 N71-17650  
Protective device for machine and metalworking tools Patent  
[NASA-CASE-XLE-01082] c 15 N71-22797  
Portable milling tool Patent  
[NASA-CASE-XMF-03511] c 15 N71-22799  
Extrusion die for refractory metals Patent  
[NASA-CASE-XLE-06773] c 15 N71-23817  
Magnetomotive metal working device Patent  
[NASA-CASE-XMF-03793] c 15 N71-24833  
Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMF-05114-3] c 15 N71-24865  
Insert facing tool — manually operated cutting tool for forming studs in honeycomb material  
[NASA-CASE-MFS-21485-1] c 37 N74-25968  
Apparatus for forming dished ion thruster grids  
[NASA-CASE-LEW-11694-2] c 37 N76-14461  
Holding fixture for a hot stamping press  
[NASA-CASE-GSC-12619-1] c 37 N84-12491

**METAL-METAL BONDING**

Method of joining aluminum to stainless steel Patent  
[NASA-CASE-MFS-07369] c 15 N71-20443  
Honeycomb panel and method of making same Patent  
[NASA-CASE-MF-01402] c 18 N71-21651  
Capillary flow weld-bonding  
[NASA-CASE-LAR-11726-1] c 37 N76-27568  
Method of cold welding using ion beam technology  
[NASA-CASE-LEW-12982-1] c 37 N81-19455  
Mechanical bonding of metal method  
[NASA-CASE-LEW-12941-1] c 26 N83-10170  
Joining lead wires to thin platinum alloy films  
[NASA-CASE-LEW-13934-1] c 35 N83-35338

**METALLIC GLASSES**

Glass compositions with a high modulus of elasticity — nontoxic glass fibers  
[NASA-CASE-HQN-10274-1] c 27 N82-29451  
High modulus invert analog glass compositions containing beryllia  
[NASA-CASE-HQN-10931-2] c 27 N82-29452

**METALLIZING**

Multilevel metallization method for fabricating a metal oxide semiconductor device  
[NASA-CASE-MFS-23541-1] c 76 N79-14906  
Overlay metallic-cermet alloy coating systems  
[NASA-CASE-LEW-13639-1] c 26 N84-33555  
Method of coating a substrate with a rapidly solidified metal  
[NASA-CASE-GSC-12880-1] c 26 N86-32550

**METALLOGRAPHY**

Method for etching copper Patent  
[NASA-CASE-XGS-06306] c 17 N71-16044

**METALLOSILOXANE POLYMER**

Thiophenyl ether disiloxanes and trisiloxanes useful as lubricant fluids  
[NASA-CASE-MFS-22411-1] c 37 N74-21058

**METALLURGY**

Induction furnace with perforated tungsten foil shielding Patent  
[NASA-CASE-XLE-04026] c 14 N71-23267  
Method of purifying metallurgical grade silicon employing reduced pressure atmospheric control  
[NASA-CASE-NPO-14474-1] c 26 N80-14229

**METALS**

Transpiration cooled turbine blade manufactured from wires Patent  
[NASA-CASE-XLE-00020] c 15 N70-33226  
Self-lubricating fluoride metal composite materials Patent  
[NASA-CASE-XLE-08511] c 18 N71-23710  
Convoluting device for forming convolutions and the like Patent  
[NASA-CASE-XNP-05297] c 15 N71-23811  
Forming tool for ribbon or wire  
[NASA-CASE-XLA-05966] c 15 N72-12408  
Peen plating  
[NASA-CASE-GSC-11163-1] c 15 N73-32360  
Glass-to-metal seals comprising relatively high expansion metals  
[NASA-CASE-LEW-10698-1] c 37 N74-21063  
Scanning nozzle plating system — for etching or plating metals on substrates without masking  
[NASA-CASE-NPO-11758-1] c 31 N74-23065  
Production of pure metals  
[NASA-CASE-LEW-10906-1] c 25 N74-30502  
Thermocouple tape — developed from thermoelectrically different metals  
[NASA-CASE-LEW-11072-2] c 35 N76-15434  
Method of forming shrink-fit compression seal  
[NASA-CASE-LAR-11563-1] c 37 N77-23482  
Solar cells having integral collector grids  
[NASA-CASE-LEW-12819-1] c 44 N79-11467  
Metal phthalocyanine polymers  
[NASA-CASE-ARC-11405-1] c 27 N84-27884  
Insulation bonding test system  
[NASA-CASE-MFS-25862-1] c 27 N85-20126  
Device and method for frictionally testing materials for ignitability  
[NASA-CASE-MSC-20622-1] c 25 N86-19413  
Metal phthalocyanine intermediates for the preparation of polymers  
[NASA-CASE-ARC-11405-2] c 27 N86-19455  
Method and apparatus for rebalancing a REDOX flow cell system  
[NASA-CASE-LEW-14127-1] c 33 N86-20680  
Thermocouple for heating and cooling of memory metal actuators  
[NASA-CASE-NPO-17068-1-CU] c 35 N88-29151  
Metal chloride cathode for a battery  
[NASA-CASE-NPO-17809-1-CU] c 33 N90-27041

**METASTABLE STATE**

Stabilization of He<sub>2</sub>(a 3 Sigma u+ molecules in liquid helium by optical pumping for vacuum UV laser 6  
[NASA-CASE-NPO-13993-1] c 72 N79-13826  
Modulated voltage metastable ionization detector  
[NASA-CASE-ARC-11503-1] c 35 N85-34374

**METEORITE COLLISIONS**

Pressurized panel  
[NASA-CASE-XLA-08916-2] c 14 N73-28487  
Method of and device for determining the characteristics and flux distribution of micrometeorites — scanning puncture holes in sheet material with photoelectric cell  
[NASA-CASE-NPO-12127-1] c 91 N74-13130

**METEORITES**

Method of making pressurized panel Patent  
[NASA-CASE-XLA-08916] c 15 N71-29018

**METEORITIC DAMAGE**

Meteoroid sensing apparatus having a coincidence network connected to a pair of capacitors Patent  
[NASA-CASE-XLE-01246] c 14 N71-10797

**METEOROID HAZARDS**

Meteoroid impact position locator aid for manned space station  
[NASA-CASE-LAR-10629-1] c 35 N75-33367

**METEOROID PROTECTION**

Aerodynamic protection for space flight vehicles Patent  
[NASA-CASE-XNP-02507] c 31 N71-17679

**METEOROIDS**

Apparatus for photographing meteors  
[NASA-CASE-LAR-10226-1] c 14 N73-19419  
Meteoroid capture cell construction  
[NASA-CASE-MSC-12423-1] c 91 N76-30131

**METEOROLOGICAL BALLOONS**

Meteorological balloon Patent  
[NASA-CASE-XMF-04163] c 02 N71-23007

**METHANE**

Gas lubricant compositions Patent  
[NASA-CASE-XLE-00353] c 18 N70-39897  
Portable remote laser sensor for methane leak detection  
[NASA-CASE-NPO-15790-1] c 36 N85-21631  
Bis(4-(3,4-dimethylenepyrrolyl)-phenyl) methane  
[NASA-CASE-LAR-13965-1-CU] c 23 N90-21118

**METHYL ALCOHOL**

Supercritical multicomponent solvent coal extraction  
[NASA-CASE-NPO-15767-1] c 23 N84-16255

**METHYL COMPOUNDS**

Process for producing tris s(n-methylamino) methylsilane  
[NASA-CASE-MFS-25721-1] c 25 N85-21280  
Polymer of phosphonylmethyl-2,4- and -2,6-diamino benzene and polyfunctional monomer  
[NASA-CASE-ARC-11506-2] c 23 N86-32525  
The 1-((diorganoxyphosphonyl)-methyl)-2,4- and -2,6-diamido benzenes  
[NASA-CASE-ARC-11425-4] c 23 N90-20133  
Some 1-(diorganoxyphosphonyl)methyl-2,4- and -2,6-dinitro-benzenes  
[NASA-CASE-ARC-11425-3] c 23 N90-23475

**METHYLENE**

Carboranyl methylene-substituted phosphazenes and polymers thereof  
[NASA-CASE-ARC-11370-1] c 27 N84-22750  
Process for crosslinking methylene-containing aromatic polymers with ionizing radiation  
[NASA-CASE-LAR-13448-1] c 27 N90-21198

**MICHELSON INTERFEROMETERS**

Interferometer direction sensor Patent  
[NASA-CASE-NPO-10320] c 14 N71-17655  
Interferometer servo system Patent  
[NASA-CASE-NPO-10300] c 14 N71-17662  
Multispectral imaging system  
[NASA-CASE-MSC-12404-1] c 23 N73-13661  
Interferometer mirror tilt correcting system  
[NASA-CASE-NPO-13687-1] c 35 N78-18391

**MICROANALYSIS**

Plural output optometric sample cell and analysis system  
[NASA-CASE-NPO-10233-1] c 74 N78-33913

**MICROBALANCES**

Null-type vacuum microbalance Patent  
[NASA-CASE-XAC-00472] c 15 N70-40180  
Microbalance — for measuring particle mass  
[NASA-CASE-MSC-11242] c 35 N78-17358

**MICROBALLOONS**

Method of forming frozen spheres in a force-free drop tower  
[NASA-CASE-NPO-14845-1] c 27 N82-28442

**MICROBIOLOGY**

Variable angle tube holder  
[NASA-CASE-LAR-10507-1] c 11 N72-25284  
Apparatus for microbiological sampling — including automatic swabbing  
[NASA-CASE-LAR-11069-1] c 35 N75-12272  
Automatic inoculating apparatus — includes movable carriage, drive motor, and swabbing motor  
[NASA-CASE-LAR-11074-1] c 51 N75-13502  
Automatic microbial transfer device  
[NASA-CASE-LAR-11354-1] c 35 N75-27330  
Application of luciferase assay for ATP to antimicrobial drug susceptibility  
[NASA-CASE-GSC-12039-1] c 51 N77-22794  
Electrochemical detection device — for use in microbiology  
[NASA-CASE-LAR-11922-1] c 25 N79-24073  
Indirect microbial detection  
[NASA-CASE-LAR-12520-1] c 51 N81-28698

**MICROCHANNELS**

Low intensity X-ray and gamma-ray spectrometer  
[NASA-CASE-GSC-12587-1] c 35 N82-32659

**MICROCRACKS**

System for detecting substructure microfractures and method therefore  
[NASA-CASE-NPO-14192-1] c 39 N80-10507  
Laser surface fusion of plasma sprayed ceramic turbine seals  
[NASA-CASE-LEW-13269-1] c 18 N83-20996  
A tough high performance composite matrix  
[NASA-CASE-LAR-14338-1] c 24 N90-26881

**MICROELECTRONICS**

Apparatus and method for separating a semiconductor wafer Patent  
[NASA-CASE-ERC-10138] c 26 N71-14354  
Vibrophonocardiograph Patent  
[NASA-CASE-XFR-07172] c 05 N71-27234  
Microelectronic module package Patent  
[NASA-CASE-XMS-02182] c 10 N71-28783  
Method of coating through-holes Patent  
[NASA-CASE-XMF-05999] c 15 N71-29032  
Microcircuit negative cutter  
[NASA-CASE-XLA-09843] c 15 N72-27485  
Screened circuit capacitors  
[NASA-CASE-LAR-10294-1] c 26 N72-28762  
Active tuned circuit  
[NASA-CASE-GSC-11340-1] c 10 N72-33230  
Automatic visual inspection system for microelectronics  
[NASA-CASE-NPO-13282] c 38 N78-17396  
Method and apparatus for fabricating improved solar cell modules  
[NASA-CASE-NPO-14416-1] c 44 N81-14389

## MICROFIBERS

- Method of making a high voltage V-groove solar cell  
[NASA-CASE-LEW-13401-1] c 44 N82-29709
- Method for sequentially processing a multi-level interconnect circuit in a vacuum chamber  
[NASA-CASE-MFS-15670-1] c 33 N82-33634
- Method for sequentially processing a multi-level interconnect circuit in a vacuum chamber  
[NASA-CASE-MFS-256704-1] c 33 N84-22884

## MICROFILMS

- Small conductive particle sensor — microfiber size determination  
[NASA-CASE-LAR-12552-1] c 35 N82-11431

## MICROFILMS

- Apparatus for inspecting microfilm Patent  
[NASA-CASE-MFS-20240] c 14 N71-26788

## MICROGRAVITY APPLICATIONS

- Spiral vane bioreactor  
[NASA-CASE-MSC-21361-1] c 51 N89-25557

## MICROINSTRUMENTATION

- Apparatus for handling micron size range particulate material  
[NASA-CASE-NPO-10151] c 37 N78-17386

## MICROMETEORITES

- Method of and device for determining the characteristics and flux distribution of micrometeorites — scanning puncture holes in sheet material with photoelectric cell  
[NASA-CASE-NPO-12127-1] c 91 N74-13130
- Micrometeoroid velocity and trajectory analyzer  
[NASA-CASE-GSC-11892-1] c 35 N76-15433

## MICROMETEORITIDS

- Micrometeoroid velocity measuring device Patent  
[NASA-CASE-XLA-00495] c 14 N70-41332
- Force transducer Patent  
[NASA-CASE-XAC-01101] c 14 N70-41957
- Pressurized cell micrometeoroid detector Patent  
[NASA-CASE-XLA-00936] c 14 N71-14996
- Detector panels-micrometeoroid impact Patent  
[NASA-CASE-XLA-05906] c 31 N71-16221
- Rotary bead dropper and selector for testing micrometeorite detectors Patent  
[NASA-CASE-XGS-03304] c 09 N71-22988
- Micrometeoroid penetration measuring device Patent  
[NASA-CASE-XLA-00941] c 14 N71-23240
- Fabric for micrometeoroid protection garment Patent  
[NASA-CASE-MSC-12109] c 18 N71-26285
- Micrometeoroid analyzer  
[NASA-CASE-ARC-10443-1] c 14 N73-20477
- Meteoroid detector  
[NASA-CASE-LAR-10483-1] c 14 N73-32327
- Deployable pressurized cell structure for a micrometeoroid detector  
[NASA-CASE-LAR-10295-1] c 35 N74-21062
- Semiconductor projectile impact detector  
[NASA-CASE-MFS-23008-1] c 35 N78-18390

## MICROMETERS

- Apparatus for handling micron size range particulate material  
[NASA-CASE-NPO-10151] c 37 N78-17386

## MICROMINIATURIZATION

- Compensating radiometer  
[NASA-CASE-XLA-04556] c 14 N69-27484

## MICROORGANISMS

- Bacteriostatic conformal coating and methods of application Patent  
[NASA-CASE-GSC-10007] c 18 N71-16046
- Vacuum probe surface sampler  
[NASA-CASE-LAR-10623-1] c 14 N73-30395
- Measurement of gas production of microorganisms — using pressure sensors  
[NASA-CASE-LAR-11326-1] c 35 N75-33368
- Biocorruption and particulate detection system  
[NASA-CASE-NPO-13953-1] c 35 N79-28527
- Indirect microbial detection  
[NASA-CASE-LAR-12520-1] c 51 N81-28698
- Apparatus and process for microbial detection and enumeration  
[NASA-CASE-LAR-12709-1] c 35 N82-28604
- Production of butanol by fermentation in the presence of cocultures of clostridium  
[NASA-CASE-NPO-16203-1] c 23 N85-35227

## MICROPARTICLES

- Micropacked column for a chromatographic system  
[NASA-CASE-XNP-04816] c 06 N69-39936
- Powder fed sheared dispersal particle generator  
[NASA-CASE-LAR-12785-1] c 37 N84-16561

## MICROPHONES

- Audio signal processor Patent  
[NASA-CASE-MSC-12223-1] c 07 N71-26181
- Vibrophonocardiograph Patent  
[NASA-CASE-XFR-07172] c 05 N71-27234
- Wind tunnel microphone structure Patent  
[NASA-CASE-XNP-00250] c 11 N71-28779
- High-temperature microphone system — for measuring pressure fluctuations in gases at high temperature  
[NASA-CASE-LAR-12375-1] c 32 N79-24203

- Adapter for mounting a microphone flush with the external surface of the skin of a pressurized aircraft  
[NASA-CASE-FRC-11072-1] c 05 N83-27975

- Carbon granule probe microphone for leak detection — recovery boilers  
[NASA-CASE-NPO-16027-1] c 35 N85-21597

## MICROPOROSITY

- Microporous structure with layered interstitial surface treatment, and method and apparatus for preparation thereof  
[NASA-CASE-MSC-21487-1] c 25 N90-16887

## MICROPROCESSORS

- Microcomputerized electric field meter diagnostic and calibration system  
[NASA-CASE-KSC-11035-1] c 35 N78-28411
- Automatic multi-banking of memory for microprocessors  
[NASA-CASE-NPO-15295-1] c 60 N85-21992

## MICROSCOPES

- Absolute focus lock for microscopes  
[NASA-CASE-LAR-10184] c 14 N72-22445
- Hand-held photomicroscope  
[NASA-CASE-ARC-10468-1] c 14 N73-33361
- Method of examining microcircuit patterns  
[NASA-CASE-NPO-16299-1] c 33 N87-14594
- Sample holder support for microscopes  
[NASA-CASE-MFS-28420-1] c 37 N90-27113

## MICROSTRIP ANTENNAS

- Multiple band circularly polarized microstrip antenna  
[NASA-CASE-MSC-18334-1] c 32 N80-32604
- Cavity-backed, micro-strip dipole antenna array  
[NASA-CASE-MSC-18606-1] c 32 N82-11336
- Planar microstrip Yagi array antenna  
[NASA-CASE-NPO-17873-1-CU] c 32 N90-27015

## MICROSTRIP TRANSMISSION LINES

- Thin conformal antenna array for microwave power conversions  
[NASA-CASE-NPO-13886-1] c 32 N78-24391
- Cavity-backed, micro-strip dipole antenna array  
[NASA-CASE-MSC-18606-1] c 32 N82-11336
- Stripline feed for a microstrip array of patch elements with teardrop shaped probes  
[NASA-CASE-NPO-17548-1-CU] c 32 N90-16104

## MICROSTRUCTURE

- Method of producing refractory composites containing tantalum carbide, hafnium carbide, and hafnium boride Patent  
[NASA-CASE-XLE-03940] c 18 N71-26153
- Refractory metal base alloy composites  
[NASA-CASE-XLE-03940-2] c 17 N72-28536
- Diffusion welding — heat treatment of nickel alloys following single step vacuum welding process  
[NASA-CASE-LEW-11388-2] c 37 N74-21055
- Method of determining bond quality of power transistors attached to substrates — X ray inspection of junction microstructure  
[NASA-CASE-MFS-21931-1] c 37 N75-26372
- Preparation of monolithic alloys having a controlled microstructure by directional solidification under dopant-induced interface breakdown  
[NASA-CASE-MFS-23816-1] c 26 N80-23419
- Method of making an ion beam sputter-etched ventricular catheter for hydrocephalus shunt  
[NASA-CASE-LEW-13107-2] c 52 N84-23095
- Ion beam sputter etching  
[NASA-CASE-LEW-13899-1] c 31 N87-21160
- High temperature electric arc furnace and method  
[NASA-CASE-MFS-28281-1] c 09 N90-23415
- Solidification processing of alloys using an applied electric field  
[NASA-CASE-MFS-26083-1-CU] c 26 N90-26940

## MICROTHRUST

- Annular slit colloid thruster Patent  
[NASA-CASE-GSC-10709-1] c 28 N71-25213
- Heated porous plug microthruster  
[NASA-CASE-GSC-10640-1] c 28 N72-18766

## MICROWAVE AMPLIFIERS

- Temperature-compensating means for cavity resonator of amplifier Patent  
[NASA-CASE-XNP-00449] c 14 N70-35220
- Resonant isolator for maser amplifier  
[NASA-CASE-NPO-15201-1] c 36 N83-35350

## MICROWAVE ANTENNAS

- Microwave power receiving antenna Patent  
[NASA-CASE-MFS-20333] c 09 N71-13486
- Low noise single aperture multimode monopulse antenna feed system Patent  
[NASA-CASE-XNP-01735] c 07 N71-22750
- Omnidirectional microwave spacecraft antenna Patent  
[NASA-CASE-XLA-03114] c 09 N71-22888
- Validation device for spacecraft checkout equipment Patent  
[NASA-CASE-XKS-10543] c 07 N71-26292
- Multi-purpose antenna employing dish reflector with plural coaxial horn feeds  
[NASA-CASE-NPO-11264] c 07 N72-25174

- Omnidirectional slot antenna for mounting on cylindrical space vehicle  
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- Multiple reflection conical microwave antenna  
[NASA-CASE-NPO-11661] c 07 N73-14130
- Thin conformal antenna array for microwave power conversions  
[NASA-CASE-NPO-13886-1] c 32 N78-24391
- Cavity-backed, micro-strip dipole antenna array  
[NASA-CASE-MSC-18606-1] c 32 N82-11336

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- Quasi-optical microwave component Patent  
[NASA-CASE-ERC-10011] c 07 N71-29065
- Microwave integrated circuit for Josephson voltage standards  
[NASA-CASE-MFS-23845-1] c 33 N81-17348
- Laser activated MTOS microwave device  
[NASA-CASE-NPO-16112-1] c 33 N86-19516
- Universal nondestructive MM-wave integrated circuit test fixture  
[NASA-CASE-LEW-14746-1] c 33 N90-17009

## MICROWAVE COUPLING

- Indexing microwave switch Patent  
[NASA-CASE-XNP-06507] c 09 N71-23548
- Maser cavity servo-tuning system  
[NASA-CASE-NPO-15890-1-CU] c 33 N85-29143

## MICROWAVE EQUIPMENT

- Array phasing device Patent  
[NASA-CASE-ERC-10046] c 10 N71-18722
- Broadband microwave waveguide window Patent  
[NASA-CASE-XNP-08880] c 09 N71-24808
- Dual frequency microwave reflex feed  
[NASA-CASE-NPO-13091-1] c 09 N73-12214
- Resonant waveguide stark cell — using microwave spectrometers  
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- Refrigerated coaxial coupling — for microwave equipment  
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- Microwave dichroic plate  
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- Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NASA 1.71:NPO-15484-2] c 35 N85-34373

## MICROWAVE FILTERS

- High power microwave power divider Patent  
[NASA-CASE-NPO-11031] c 07 N71-33606
- High-Q bandpass resonators utilizing bandstop resonator pairs  
[NASA-CASE-GSC-10990-1] c 09 N73-26195

## MICROWAVE FREQUENCIES

- Varactor high level mixer  
[NASA-CASE-XGS-02171] c 09 N69-24324
- Voltage tunable Gunn-type microwave generator Patent  
[NASA-CASE-XER-07894] c 09 N71-18721
- Composite antenna feed  
[NASA-CASE-NPO-11046-1] c 07 N73-28013

## MICROWAVE OSCILLATORS

- Magnetically actuated tuning method for Gunn oscillators  
[NASA-CASE-NPO-12106] c 09 N73-15235
- Electron beam controller — using magnetic field to refocus spent electron beam in microwave oscillator tube  
[NASA-CASE-LEW-11617-1] c 33 N74-10195
- Low noise cryogenic dielectric resonator oscillator  
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## MICROWAVE RADIOMETERS

- Method and means for providing an absolute power measurement capability Patent  
[NASA-CASE-ERC-11020] c 14 N71-26774
- Electromagnetic power absorber  
[NASA-CASE-NPO-13830-1] c 32 N80-14281
- Microwave limb sounder — measuring trace gases in the upper atmosphere  
[NASA-CASE-NPO-14544-1] c 46 N82-12685
- CAT altitude avoidance system  
[NASA-CASE-NPO-15351-1] c 06 N83-10040
- System for indicating fuel-efficient aircraft altitude  
[NASA-CASE-NPO-15351-2] c 06 N84-34443

## MICROWAVE REFLECTOMETERS

- Reflectometer for receiver input impedance match measurement Patent  
[NASA-CASE-XNP-10843] c 07 N71-11267
- Microwave flaw detector Patent  
[NASA-CASE-ARC-10009-1] c 15 N71-17822

## MICROWAVE RESONANCE

- Dual resonant cavity absorption cell Patent  
[NASA-CASE-LAR-10305] c 14 N71-26137

## MICROWAVE SCATTERING

- Almond test body — for microwave anechoic chambers  
[NASA-CASE-LAR-13747-1-CU] c 32 N89-28672

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## MICROWAVE SENSORS

Method and apparatus for sensor fusion  
[NASA-CASE-MSC-21334-1] c 32 N89-25360

## MICROWAVE SWITCHING

Gyrator type circuit Patent  
[NASA-CASE-XAC-10608-1] c 09 N71-12517  
Microwave switching power divider — antenna feeds  
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## MICROWAVE TRANSMISSION

Frequency translating phase conjugation circuit for active retrodirective antenna array — microwave transmission  
[NASA-CASE-NPO-14536-1] c 32 N81-14185  
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Electrostatic collector for charged particles  
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## MICROWAVES

Parametric microwave noise generator Patent  
[NASA-CASE-XER-11019] c 09 N71-23598  
Method and apparatus for optical modulating a light signal Patent  
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Waveguide mixer  
[NASA-CASE-ERC-10179] c 07 N72-20141  
Microwave power transmission system wherein level of transmitted power is controlled by reflections from receiver  
[NASA-CASE-MFS-21470-1] c 44 N74-19870  
Wide power range microwave feedback controller  
[NASA-CASE-GSC-12146-1] c 33 N78-32340  
Microwave power transmission beam safety system  
[NASA-CASE-NPO-14224-1] c 33 N80-18287  
Doppler radar having phase modulation of both transmitted and reflected return signals  
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Beam forming network  
[NASA-CASE-NPO-15743-1] c 32 N85-29118  
Precision tunable resonant microwave cavity  
[NASA-CASE-LEW-13935-1] c 33 N87-21234  
Microwave field effect transistor  
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## MIDAIR COLLISIONS

Apparatus for aiding a pilot in avoiding a midair collision between aircraft  
[NASA-CASE-LAR-10717-1] c 21 N73-30641

## MILLIMETER WAVES

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Millimeter wave pumped parametric amplifier  
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## MILLING (MACHINING)

Apparatus for machining geometric cones Patent  
[NASA-CASE-XMS-04292] c 15 N71-22722  
Method and tool for machining a transverse slot about a bore  
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Method for milling and drilling glass  
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## MILLING MACHINES

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[NASA-CASE-XMF-00908] c 14 N70-40238  
Portable milling tool Patent  
[NASA-CASE-XMF-03511] c 15 N71-22789  
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Special purpose parallel computer architecture for real-time control and simulation in robotic applications  
[NASA-CASE-NPO-17629-1-CU] c 60 N90-27268

## MINERAL DEPOSITS

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## MINERAL METABOLISM

Method and system for in vivo measurement of bone tissue using a two level energy source  
[NASA-CASE-MSC-14276-1] c 52 N77-14737

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## MINIATURE ELECTRONIC EQUIPMENT

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Transducer circuit and catheter transducer Patent  
[NASA-CASE-ARC-10132-1] c 09 N71-24597  
Solid state television camera system Patent  
[NASA-CASE-XMF-06092] c 07 N71-24612  
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Miniature biaxial strain transducer  
[NASA-CASE-LAR-11648-1] c 35 N77-14407  
Miniature electrooptical air flow sensor  
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## MINIATURIZATION

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[NASA-CASE-XLA-01019] c 15 N70-40156  
Counter and shift register Patent  
[NASA-CASE-XNP-01753] c 08 N71-22897  
Miniature carbon dioxide sensor and methods  
[NASA-CASE-MSC-13332-1] c 14 N72-21408  
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Miniature cyclotron resonance ion source using small permanent magnet  
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Thumb-actuated two-axis controller  
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Longwall shearer tracking system  
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[NASA-CASE-NPO-10300] c 14 N71-17662  
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Adjustable mount for a trihedral mirror Patent  
[NASA-CASE-XNP-08907] c 23 N71-29123  
Optical range finder having nonoverlapping complete images  
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Optical system support apparatus  
[NASA-CASE-XER-07896-2] c 23 N72-22673  
Strain gauge ambiguity sensor for segmented mirror active optical system  
[NASA-CASE-MFS-20506-1] c 35 N75-12273  
Method for manufacturing mirrors in zero gravity environment  
[NASA-CASE-MSC-12611-1] c 12 N76-15189  
Method of and means for testing a glancing-incidence mirror system of an X-ray telescope  
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Interferometer mirror tilt correcting system  
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Dual aperture multispectral Schmidt objective  
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Spectral slicing X-ray telescope with variable magnification  
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[NASA-CASE-XLA-08507] c 09 N69-39984  
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[NASA-CASE-GSC-10062] c 14 N71-15605  
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Full wave modulator-demodulator amplifier apparatus — for generating rectified output signal  
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- High modulus rare earth and beryllium containing silicate glass compositions — for glass reinforcing fibers  
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- High resistance and raised modulus carbon fibers  
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- Trace water sensor  
[NASA-CASE-NPO-15722-1] c 35 N85-29212
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- Instrumentation for sensing moisture content of material using a transient thermal pulse  
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- Moisture content and gas sampling device  
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- Process for improving moisture resistance of epoxy resins by addition of chromium ions  
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- Method for molding compounds Patent  
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- Method of making a molded connector Patent  
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- Hydraulic casting of liquid polymers Patent  
[NASA-CASE-XNP-07659] c 06 N71-22975
- Hydroforming techniques using epoxy molds Patent  
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- Molding process for imidazopyrrolone polymers  
[NASA-CASE-LAR-10547-1] c 31 N74-13177
- Evacuated displacement compression molding  
[NASA-CASE-LAR-10782-1] c 31 N74-14133
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- Method of making a rocket nozzle  
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- Method of making an apertured casting — using duplicate mold  
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- Omnidirectional anisotropic molecular trap Patent  
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- Diatomic infrared gasdynamic laser — for producing different wavelengths  
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- Correlation spectrometer having high resolution and multiplexing capability  
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- Light weight polymer matrix composite material  
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- Aromatic polyimides containing a dimethylsilane-linked dianhydride  
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- Process of end-capping a polyimide system  
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[NASA-CASE-LEW-12905-1] c 26 N78-18183  
Method of making a light weight battery plaque  
[NASA-CASE-LEW-13349-1] c 26 N84-22734  
Metal (2,4,4',4'') phthalocyanine tetraamines as curing agents for epoxy resins  
[NASA-CASE-ARC-11424-1] c 27 N85-34281  
Oxidation resistant slurry coating for carbon-based materials  
[NASA-CASE-LEW-13923-1] c 26 N85-35267

**NICKEL ALLOYS**

High temperature nickel-base alloy Patent  
[NASA-CASE-XLE-00151] c 17 N70-33283  
Nickel-base alloy Patent  
[NASA-CASE-XLE-00283] c 17 N70-36616  
Nickel-base alloy containing Mo-W-Al-Cr-Ta-Zr-C-Nb-B Patent  
[NASA-CASE-XLE-02082] c 17 N71-16026  
Nickel base alloy  
[NASA-CASE-LEW-10874-1] c 17 N72-22535  
Diffusion welding — heat treatment of nickel alloys following single step vacuum welding process  
[NASA-CASE-LEW-11388-2] c 37 N74-21055  
Method of heat treating age-hardenable alloys  
[NASA-CASE-XNP-01311] c 26 N75-29236  
Zirconium modified nickel-copper alloy  
[NASA-CASE-LEW-12245-1] c 26 N77-20201  
Directionally solidified eutectic gamma plus beta nickel-base superalloys  
[NASA-CASE-LEW-12906-1] c 26 N77-32279  
Nickel base alloy — for gas turbine engine stator vanes  
[NASA-CASE-LEW-12270-1] c 26 N77-32280  
Nickel ternary alloy having improved cyclic oxidation resistance  
[NASA-CASE-LEW-13339-1] c 26 N82-31505  
Nickel base coating alloy  
[NASA-CASE-LEW-13834-1] c 26 N87-14482  
Heat treatment for superalloy  
[NASA-CASE-LEW-14262-1] c 26 N87-28647

**NICKEL CADMIUM BATTERIES**

Heat flow calorimeter — measures output of Ni-Cd batteries  
[NASA-CASE-GSC-11434-1] c 34 N74-27859  
Method and apparatus for conditioning of nickel-cadmium batteries  
[NASA-CASE-MFS-23270-1] c 44 N78-25531

**NICKEL COATINGS**

Nickel aluminide coated low alloy stainless steel  
[NASA-CASE-LEW-11267-1] c 17 N73-32414  
Selective coating for solar panels — using black chrome and black nickel  
[NASA-CASE-LEW-12159-1] c 44 N78-19599

**NICKEL COMPOUNDS**

Didymium hydrate additive to nickel hydroxide electrodes Patent  
[NASA-CASE-XGS-03505] c 03 N71-10608  
Brazing alloy  
[NASA-CASE-XNP-03878] c 26 N75-27127

**NICKEL HYDROGEN BATTERIES**

Oxygen recombination in individual pressure vessel nickel-hydrogen batteries  
[NASA-CASE-LEW-13822-1] c 44 N86-25874

**NICKEL PLATE**

Plating nickel on aluminum castings Patent  
[NASA-CASE-XNP-04148] c 17 N71-24830

**NICKEL ZINC BATTERIES**

Additive for zinc electrodes — electric automobiles  
[NASA-CASE-LEW-13286-1] c 33 N84-14422

**NIOBIUM**

Trialkyl-dihalotantalum and niobium compounds Patent  
[NASA-CASE-XNP-04023] c 06 N71-28808

**NIOBIUM COMPOUNDS**

Method of producing high T(subc) superconducting NBN films  
[NASA-CASE-NPO-16681-1-CU] c 76 N88-24543  
Edge geometry superconducting tunnel junctions utilizing an NBN/MgO/NBN thin film structure  
[NASA-CASE-NPO-17812-1-CU] c 76 N90-17456



## NITRAMINE PROPELLANTS

Nitramine propellants — gun propellant burning rate  
[NASA-CASE-NPO-14103-1] c 28 N78-31255

## NITRATION

The 1-((diorganoxyphosphonyl)-methyl)-2,4- and  
-2,6-diamido benzenes  
[NASA-CASE-ARC-11425-4] c 23 N90-20133  
Some 1-((diorganoxyphosphonyl)-methyl)-2,4- and  
-2,6-dinitro-benzenes  
[NASA-CASE-ARC-11425-3] c 23 N90-23475

## NITRIC OXIDE

Reduction of nitric oxide emissions from a combustor  
[NASA-CASE-ARC-10814-2] c 07 N80-26298

## NITRIDES

Refractory coatings and method of producing the  
same  
[NASA-CASE-LEW-13169-1] c 26 N82-28415  
Method of producing high T(subc) superconducting NBN  
films  
[NASA-CASE-NPO-16681-1-CU] c 76 N88-24543  
Edge geometry superconducting tunnel junctions  
utilizing an NbN/MgO/NbN thin film structure  
[NASA-CASE-NPO-17812-1-CU] c 76 N90-17456

## NITRIDING

Ion-beam nitriding of steels  
[NASA-CASE-LEW-14104-2] c 26 N88-14179

## NITRILES

Intumescent paint containing nitrile rubber  
[NASA-CASE-ARC-10196-1] c 18 N73-13562  
Trimerization of aromatic nitriles  
[NASA-CASE-LEW-12053-1] c 27 N78-15276  
Process for preparing phthalocyanine polymer from  
imide containing bisphthalonitrile  
[NASA-CASE-ARC-11511-2] c 27 N87-21112

## NITRO COMPOUNDS

Intumescent coatings containing 4,4'-dinitrosulfanilide  
[NASA-CASE-ARC-11042-1] c 24 N78-14096

## NITROAMINES

Intumescent paints Patent  
[NASA-CASE-ARC-10099-1] c 18 N71-15469  
Polymeric vehicles as carriers for sulfonic acid salt of  
nitrosubstituted aromatic amines  
[NASA-CASE-ARC-10325] c 06 N72-25147

## NITROGEN

III-V photocathode with nitrogen doping for increased  
quantum efficiency  
[NASA-CASE-NPO-12134-1] c 33 N76-31409

## NITROGEN COMPOUNDS

Method for preparing addition type polyimide prepreps  
[NASA-CASE-LAR-12054-2] c 27 N81-14078

## NITROGEN OXIDES

Combustion engine — for air pollution control  
[NASA-CASE-NPO-13671-1] c 37 N77-31497  
Combustor — low nitrogen oxide formation  
[NASA-CASE-NPO-13958-1] c 25 N79-11151

## NITROGEN TETROXIDE

Procedure and apparatus for determination of water in  
nitrogen tetroxide  
[NASA-CASE-NPO-10234] c 06 N72-17094

## NITROGUANIDINE

Hydrazinium nitroformate propellant stabilized with  
nitroguanidine  
[NASA-CASE-NPO-12000] c 27 N72-25699

## NOBLE METALS

GaAs Schottky barrier photo-responsive device and  
method of fabrication  
[NASA-CASE-GSC-12816-1] c 76 N86-20150  
Process for making a noble metal on tin oxide catalyst  
[NASA-CASE-LAR-13741-1-SB] c 25 N90-20180

## NODES (STANDING WAVES)

System for controlled acoustic rotation of objects  
[NASA-CASE-NPO-15522-1] c 71 N83-32516

## NOISE GENERATORS

Pseudo-noise test set for communication system  
evaluation — test signals  
[NASA-CASE-MFS-22671-1] c 35 N75-21582  
Method of and means for testing a tape record/playback  
system  
[NASA-CASE-MFS-22671-2] c 35 N77-17426  
Active control of boundary layer transition and  
turbulence  
[NASA-CASE-LAR-13532-1] c 34 N86-26575

## NOISE METERS

Instrumentation for measurement of aircraft noise and  
sonic boom  
[NASA-CASE-LAR-11173-1] c 35 N75-19614  
Differential sound level meter  
[NASA-CASE-LAR-12106-1] c 71 N78-14867  
Ride quality meter  
[NASA-CASE-LAR-12882-1] c 35 N84-12445

## NOISE REDUCTION

Jet aircraft configuration Patent  
[NASA-CASE-XLA-00087] c 02 N70-33332  
Cassegrainian antenna subreflector flange for suppressing  
ground noise Patent  
[NASA-CASE-XNP-00683] c 09 N70-35425

Device for suppressing sound and heat produced by  
high-velocity exhaust jets Patent

[NASA-CASE-XMF-01813] c 28 N70-41582

Variable time constant smoothing circuit Patent  
[NASA-CASE-XGS-01983] c 10 N70-41964

Digital telemetry system Patent  
[NASA-CASE-XGS-01812] c 07 N71-23001

Audio signal processor Patent  
[NASA-CASE-MS-C-12223-1] c 07 N71-26181

Variable frequency nuclear magnetic resonance  
spectrometer Patent  
[NASA-CASE-XNP-09830] c 14 N71-26266

Method and apparatus for eliminating coherent noise  
in a coherent energy imaging system without destroying  
spatial coherence  
[NASA-CASE-GSC-11133-1] c 23 N72-11568

Audio system with means for reducing noise effects  
[NASA-CASE-NPO-11631] c 10 N73-12244

Gas turbine exhaust nozzle — for noise reduction  
[NASA-CASE-LEW-11569-1] c 07 N74-15453

Totally confined explosive welding — apparatus to  
reduce noise level and protect personnel during explosive  
bonding  
[NASA-CASE-LAR-10941-1] c 37 N74-21057

Jet exhaust noise suppressor  
[NASA-CASE-LEW-11286-1] c 07 N74-27490

Supersonic fan blading — noise reduction in turbofan  
engines  
[NASA-CASE-LEW-11402-1] c 07 N74-28226

Variably positioned guide vanes for aerodynamic  
choking  
[NASA-CASE-LAR-10642-1] c 07 N74-31270

Noise suppressor — for turbofan engine by incorporating  
annular acoustically porous elements in exhaust and inlet  
ducts  
[NASA-CASE-LAR-11141-1] c 07 N74-32418

Abating exhaust noises in jet engines  
[NASA-CASE-ARC-10712-1] c 07 N74-33218

Television noise reduction device  
[NASA-CASE-MS-C-12607-1] c 32 N75-21485

Cascade plug nozzle — for jet noise reduction  
[NASA-CASE-LAR-11674-1] c 07 N76-18117

Apparatus for reducing aerodynamic noise in a wind  
tunnel  
[NASA-CASE-MFS-23099-1] c 09 N76-23273

Optical noise suppression device and method — laser  
light exposing film  
[NASA-CASE-MS-C-12640-1] c 74 N76-31998

Variable thrust nozzle for quiet turbofan engine and  
method of operating same  
[NASA-CASE-LEW-12317-1] c 07 N78-17055

Magneto-optic detection system with noise  
cancellation  
[NASA-CASE-NPO-11954-1] c 35 N78-29421

Totally confined explosive welding  
[NASA-CASE-LAR-10941-2] c 37 N79-13364

Sound-suppressing structure with thermal relief  
[NASA-CASE-LEW-12658-1] c 71 N79-14871

Acoustically swept rotor — helicopter noise reduction  
[NASA-CASE-ARC-11106-1] c 05 N80-14107

Support assembly for cryogenically coolable low-noise  
choke waveguide  
[NASA-CASE-NPO-14253-1] c 32 N80-32605

Curved centerline air intake for a gas turbine engine  
[NASA-CASE-LEW-13201-1] c 07 N81-14899

Multiple pure tone elimination strut assembly — air  
breathing engines  
[NASA-CASE-FRC-11062-1] c 71 N82-16800

Sound shield  
[NASA-CASE-LAR-12883-1] c 71 N83-17235

Noise suppressor for turbo fan jet engines  
[NASA-CASE-ARC-10812-1] c 07 N83-33884

Apparatus and method for jet noise suppression  
[NASA-CASE-LAR-11903-2] c 71 N84-14873

Phase sensitive guidance sensor for wire-following  
vehicles  
[NASA-CASE-NPO-15341-1] c 35 N84-33769

Comparator with noise suppression  
[NASA-CASE-LAR-13151-1] c 33 N87-21235

Sound attenuation apparatus  
[NASA-CASE-LAR-13968-1] c 71 N90-15710

Low-noise nozzle valve  
[NASA-CASE-MFS-28383-1] c 34 N90-17051

NOISE TEMPERATURE

Method and means for providing an absolute power  
measurement capability Patent  
[NASA-CASE-ERC-11020] c 14 N71-26774

NOISE THRESHOLD

Frequency modulation demodulator threshold extension  
device Patent  
[NASA-CASE-MS-C-12165-1] c 07 N71-33696

NONADIABATIC CONDITIONS

Direct heating surface combustor  
[NASA-CASE-LEW-11877-1] c 34 N78-27357

## NONDESTRUCTIVE TESTS

Determination of spot weld quality Patent  
[NASA-CASE-XNP-02588] c 15 N71-18613

Space simulator Patent  
[NASA-CASE-NPO-10141] c 11 N71-24964

Apparatus for inspecting microfilm Patent  
[NASA-CASE-MFS-20240] c 14 N71-26788

Dye penetrant for surfaces subsequently contacted by  
liquid oxygen Patent  
[NASA-CASE-XMF-02221] c 18 N71-27170

Method and device for detecting voids in low density  
material Patent  
[NASA-CASE-MFS-20044] c 14 N71-28993

Holographic system for nondestructive testing  
[NASA-CASE-MFS-21704-1] c 35 N75-25124

Method and apparatus for nondestructive testing of  
pressure vessels  
[NASA-CASE-NPO-12142-1] c 38 N78-28563

Non-destructive method for applying and removing  
instrumentation on helicopter rotor blades  
[NASA-CASE-LAR-11201-1] c 35 N78-24515

Hybrid holographic non-destructive test system  
[NASA-CASE-MFS-23114-1] c 38 N78-32447

Insulation bonding test system  
[NASA-CASE-MFS-25862-1] c 27 N85-20126

Method and apparatus for mapping the distribution of  
chemical elements in an extended medium  
[NASA-CASE-GSC-12808-1] c 25 N85-21279

Ultrasonic angle beam standard reflector — ultrasonic  
nondestructive inspection  
[NASA-CASE-LAR-13153-1] c 71 N86-21276

Method and apparatus for measuring minority carrier  
lifetime in a direct band-gap semiconductor  
[NASA-CASE-NPO-16337-1-CU] c 33 N87-22894

Acoustic emission frequency discrimination  
[NASA-CASE-MS-C-20467-1] c 35 N88-23966

Magneto acoustic emission apparatus for testing  
materials for embrittlement  
[NASA-CASE-LAR-13817-1] c 26 N90-21170

Method of radiographic inspection of wooden  
members  
[NASA-CASE-LAR-13724-1] c 38 N90-23756

NONEQUILIBRIUM CONDITIONS

Condition sensor system and method  
[NASA-CASE-MS-C-14805-1] c 54 N78-32720

NONEQUILIBRIUM PLASMAS

Probes having ring and primary sensor at same potential  
to prevent collection of stray wall currents in ionized  
gases  
[NASA-CASE-XLE-00690] c 25 N69-39884

NONEQUILIBRIUM RADIATION

Non-equilibrium radiation nuclear reactor  
[NASA-CASE-HON-10841-1] c 73 N78-19920

NONFLAMMABLE MATERIALS

Intumescent paint containing nitrile rubber  
[NASA-CASE-ARC-10196-1] c 18 N73-13562

Non-flammable elastomeric fiber from a fluorinated  
elastomer and containing an halogenated flame  
retardant  
[NASA-CASE-MS-C-14331-1] c 27 N76-24405

NONLINEAR FEEDBACK

Coherent receiver employing nonlinear coherence  
detection for carrier tracking  
[NASA-CASE-NPO-11921-1] c 32 N74-30523

Nonlinear nonsingular feedback shift registers  
[NASA-CASE-NPO-13451-1] c 33 N76-14373

NONLINEAR FILTERS

Apparatus for damping operator induced oscillations of  
a controlled system — flight control  
[NASA-CASE-FRC-11041-1] c 33 N82-18493

NONLINEAR OPTICS

Molecules with enhanced electronic polarizabilities  
based on defect-like states in conjugated polymers  
[NASA-CASE-NPO-17633-1-CU] c 27 N90-15263

NONLINEAR SYSTEMS

Phase detector assembly Patent  
[NASA-CASE-XMF-00701] c 09 N70-40272

Nonlinear analog-to-digital converter Patent  
[NASA-CASE-XAC-04031] c 08 N71-18594

Split range transducer  
[NASA-CASE-XLA-11189] c 10 N72-20222

Contour measurement system  
[NASA-CASE-MFS-23726-1] c 43 N79-26439

NORMAL DENSITY FUNCTIONS

Ultrasonic transducer with Gaussian radial pressure  
distribution  
[NASA-CASE-LAR-12967-1] c 35 N84-22932

NOSE CONES

Automatically deploying nozzle exit cone extension  
Patent  
[NASA-CASE-XLE-01640] c 31 N71-15637

Nose cone mounted heat resistant antenna Patent  
[NASA-CASE-XMS-04312] c 07 N71-22984

## NOSE WHEELS

### NOSE WHEELS

Nose gear steering system for vehicle with main skids  
Patent  
[NASA-CASE-XLA-01804] c 02 N70-34160

### NOTCH STRENGTH

Active notch filter network with variable notch depth, width and frequency  
[NASA-CASE-FRC-11055-1] c 33 N80-29583

### NOTCH TESTS

Vee-notching device --- with adjustable carriage  
[NASA-CASE-MFS-20730-1] c 39 N74-13131  
Notch filter  
[NASA-CASE-MFS-23303-1] c 32 N77-18307

### NOTCHES

Notch filter  
[NASA-CASE-MFS-23303-1] c 32 N77-18307

### NOZZLE DESIGN

Annular rocket motor and nozzle configuration Patent  
[NASA-CASE-XLE-00078] c 28 N70-33284  
Penshape exhaust nozzle for supersonic engine  
Patent  
[NASA-CASE-XLE-00057] c 28 N70-38711  
Telescoping-spike supersonic inlet for aircraft engines  
Patent  
[NASA-CASE-XLE-00005] c 28 N70-39899  
Automatically deploying nozzle exit cone extension  
Patent  
[NASA-CASE-XLE-01640] c 31 N71-15637  
Injector assembly for liquid fueled rocket engines  
Patent  
[NASA-CASE-XMF-00968] c 28 N71-15660  
Collapsible nozzle extension for rocket engines  
Patent  
[NASA-CASE-MFS-11497] c 28 N71-16224  
Gas turbine combustion apparatus Patent  
[NASA-CASE-XLE-103477-1] c 28 N71-20330  
Prestressed refractory structure Patent  
[NASA-CASE-XNP-02888] c 18 N71-21068  
Scanning nozzle plating system --- for etching or plating metals on substrates without masking  
[NASA-CASE-NPO-11758-1] c 31 N74-23065  
Variable thrust nozzle for quiet turbofan engine and method of operating same  
[NASA-CASE-LEW-12317-1] c 07 N78-17055  
Variable area exhaust nozzle  
[NASA-CASE-LEW-12378-1] c 07 N79-14097  
Aircraft engine nozzle  
[NASA-CASE-ARC-10977-1] c 07 N80-32392  
Sandblasting nozzle  
[NASA-CASE-NPO-13823-1] c 37 N81-25371  
Controlled overspray spray nozzle  
[NASA-CASE-MFS-25139-1] c 34 N82-13376  
Low-noise nozzle valve  
[NASA-CASE-MFS-28383-1] c 34 N90-17051

### NOZZLE FLOW

Control system for rocket vehicles Patent  
[NASA-CASE-XLA-01163] c 21 N71-15582  
Aerodynamic spike nozzle Patent  
[NASA-CASE-XGS-01143] c 31 N71-15647  
Propellant mass distribution metering apparatus  
Patent  
[NASA-CASE-NPO-10185] c 10 N71-26339  
Tertiary flow injection thrust vectoring system Patent  
[NASA-CASE-MFS-20831] c 28 N71-29153  
Multi-purpose wind tunnel reaction control model  
block  
[NASA-CASE-MSC-19706-1] c 09 N78-31129  
Adjustable choke for fluids nozzle  
[NASA-CASE-NPO-17625-1-CU] c 34 N90-27070

### NOZZLE GEOMETRY

Method of making a rocket nozzle  
[NASA-CASE-XMF-06884-1] c 20 N79-21123  
Nozzle fabrication technique  
[NASA-CASE-MSC-21299-1] c 20 N88-24684

### NOZZLE INSERTS

Self-sealing, unbonded, rocket motor nozzle closure  
Patent  
[NASA-CASE-XLA-02651] c 28 N70-41967  
Wind tunnel supplementary Mach number minimum  
section insert  
[NASA-CASE-LAR-12532-1] c 09 N82-11088

### NUCLEAR EXPLOSION EFFECT

Method and construction for protecting heat sensitive bodies from thermal radiation and convective heat  
Patent  
[NASA-CASE-XNP-01310] c 33 N71-28852

### NUCLEAR FUEL ELEMENTS

Nuclear fuel elements  
[NASA-CASE-XLE-00209] c 22 N73-32528

### NUCLEAR MAGNETIC RESONANCE

Variable frequency nuclear magnetic resonance spectrometer Patent  
[NASA-CASE-XNP-09830] c 14 N71-26266

### NUCLEAR POWER PLANTS

Self-adjusting multisegment, deployable, natural circulation radiator Patent  
[NASA-CASE-XHQ-03673] c 33 N71-29046

### NUCLEAR PUMPED LASERS

Volumetric direct nuclear pumped laser  
[NASA-CASE-LAR-12183-1] c 36 N79-18307

### NUCLEAR PUMPING

Large volume multiple-path nuclear pumped laser  
[NASA-CASE-LAR-12592-1] c 36 N82-13415

### NUCLEAR REACTOR CONTROL

Gaseous control system for nuclear reactors  
[NASA-CASE-XLE-04599] c 22 N72-20597  
Control for nuclear thermionic power source  
[NASA-CASE-NPO-13114-2] c 73 N78-28913

### NUCLEAR REACTORS

Nuclear thermionic converter --- tungsten-thorium oxide rods  
[NASA-CASE-NPO-13121-1] c 73 N77-18891  
High thermal power density heat transfer apparatus providing electrical isolation at high temperature using heat pipes  
[NASA-CASE-LEW-12950-2] c 34 N85-29179  
Jet pump-drive system for heat removal  
[NASA-CASE-NPO-16494-1-CU] c 34 N85-29182

### NUCLEATE BOILING

Method of improving heat transfer characteristics in a nucleate boiling process Patent  
[NASA-CASE-XMS-04268] c 33 N71-16277

### NUCLEOPHILES

Polyphenylquinoxalines via aromatic nucleophilic displacement  
[NASA-CASE-LAR-13988-1] c 23 N89-11814

### NULL ZONES

Null device for hand controller Patent  
[NASA-CASE-XLA-01808] c 15 N71-20740

### NUMBER THEORY

Binary concatenated coding system  
[NASA-CASE-MSC-14082-1] c 60 N76-23850

### NUMERICAL ANALYSIS

Method of and apparatus for generating an interstitial point in a data stream having an even number of data points  
[NASA-CASE-MFS-25319-1] c 60 N85-33701

### NUMERICAL CONTROL

Fringe counter for interferometers Patent  
[NASA-CASE-LAR-10204] c 14 N71-27215  
Digital numerically controlled oscillator  
[NASA-CASE-MSC-16747-1] c 33 N81-17349  
Controller for computer control of brushless dc motors --- automobile engines  
[NASA-CASE-NPO-13970-1] c 33 N81-20352  
Reconfiguring redundancy management  
[NASA-CASE-MSC-18498-1] c 60 N82-29013  
Brushless DC motor control system responsive to control signals generated by a computer or the like  
[NASA-CASE-NPO-16420-1] c 33 N86-20681  
Variable friction secondary seal for face seals  
[NASA-CASE-LEW-14170-1] c 37 N86-25790  
A universal computer control system for motors  
[NASA-CASE-NPO-17134-1-CU] c 33 N88-24864  
Smart tunnel: Docking mechanism  
[NASA-CASE-MSC-21360-1] c 18 N89-25263  
Spacecraft component heater control system  
[NASA-CASE-MFS-28327-1] c 18 N89-28556  
Bus programmable slave module  
[NASA-CASE-MSC-21387-1] c 61 N90-16411  
A digitally controlled system for effecting and presenting a selected electrical resistance  
[NASA-CASE-MFS-29149-1] c 33 N90-19492  
Computer access security code system  
[NASA-CASE-NPO-17525-1-CU] c 60 N90-25583

### NUMERICAL INTEGRATION

Apparatus for computing square roots Patent  
[NASA-CASE-XGS-04768] c 08 N71-19437

### NUOTATION

Method and means for damping nutation in a satellite  
Patent  
[NASA-CASE-XMF-00442] c 31 N71-10747  
Nutation damper  
[NASA-CASE-GSC-11205-1] c 15 N73-25513

### NUOTATION DAMPERS

Active nutation controller  
[NASA-CASE-GSC-12273-1] c 35 N80-21719  
Method of damping nutation motion with minimum spin axis attitude disturbance  
[NASA-CASE-GSC-12551-1] c 18 N83-28064

### NUTS (FASTENERS)

Separation nut Patent  
[NASA-CASE-XGS-01971] c 15 N71-15922  
Split nut separation system Patent  
[NASA-CASE-XNP-06914] c 15 N71-21489  
Fastener stretcher  
[NASA-CASE-GSC-11149-1] c 15 N73-30457  
High-torque open-end wrench  
[NASA-CASE-NPO-13541-1] c 37 N79-14383

Floating nut retention system  
[NASA-CASE-MSC-16938-1] c 37 N80-23653  
Daze fasteners  
[NASA-CASE-LAR-13009-2] c 37 N87-22976  
Tube coupling device  
[NASA-CASE-MFS-25964-2] c 37 N87-22977

## O

### O RING SEALS

High pressure four-way valve Patent  
[NASA-CASE-XNP-00214] c 15 N70-36908  
Self-stabilizing radial face seal  
[NASA-CASE-LEW-12991-1] c 37 N81-24442  
Circumferential shaft seal  
[NASA-CASE-LEW-12119-2] c 37 N81-26447  
Modified spiral wound retaining ring  
[NASA-CASE-LAR-12361-1] c 37 N83-19091  
Resilient seal ring assembly with spring means applying force to wedge member --- cryogenic applications  
[NASA-CASE-MFS-25678-1] c 37 N84-11497  
Variable friction secondary seal for face seals  
[NASA-CASE-LEW-14170-1] c 37 N86-25790  
O-ring gasket test fixture  
[NASA-CASE-MFS-28376-1] c 14 N89-28546  
High temperature, flexible, thermal barrier seal  
[NASA-CASE-LEW-14672-1] c 37 N90-15444

### OBLIQUE WINGS

Oblique-wing supersonic aircraft  
[NASA-CASE-ARC-10470-3] c 05 N76-29217

### OBSERVATION

Method for investigating the formation of crystals in a transparent material  
[NASA-CASE-MFS-26008-1-CU] c 76 N88-14835

### OBSTACLE AVOIDANCE

Method and apparatus for configuration control of redundant robots  
[NASA-CASE-NPO-17801-1-CU] c 37 N90-27110

### OCCLUSION

Prosthetic occlusive device for an internal passageway  
[NASA-CASE-MFS-25740-1] c 52 N84-11744

### OCEAN CURRENTS

Method and apparatus for Delta Kappa synthetic aperture radar measurement of ocean current  
[NASA-CASE-NPO-15704-1] c 32 N85-34327

### OCEAN DATA ACQUISITIONS SYSTEMS

Oceanic wave measurement system  
[NASA-CASE-MFS-23862-1] c 48 N80-18667  
Method of measuring sea surface water temperature with a satellite including wideband passive synthetic-aperture multichannel receiver  
[NASA-CASE-NPO-15651-1] c 43 N85-21723

### OCEAN SURFACE

Surface roughness measuring system --- synthetic aperture radar measurements of ocean wave height and terrain peaks  
[NASA-CASE-NPO-13862-1] c 35 N79-10391  
Oceanic wave measurement system  
[NASA-CASE-MFS-23862-1] c 48 N80-18667

### OCEAN THERMAL ENERGY CONVERSION

Ocean thermal plant  
[NASA-CASE-KSC-11034-1] c 44 N78-32542

### ODORS

Vapor fragrances  
[NASA-CASE-LAR-13680-1] c 35 N87-25561

### OFFSHORE PLATFORMS

Ocean thermal plant  
[NASA-CASE-KSC-11034-1] c 44 N78-32542

### OHMMETERS

Positive contact resistance soldering unit  
[NASA-CASE-KSC-10242] c 15 N72-23497  
Four-terminal electrical testing device --- initiator  
[NASA-CASE-MSC-21166-1] c 35 N87-25555

### OIL EXPLORATION

Underwater seismic source --- for petroleum exploration  
[NASA-CASE-NPO-14255-1] c 46 N79-23555  
Borehole geological assessment  
[NASA-CASE-NPO-14231-1] c 46 N80-10709

### OIL RECOVERY

Oil and fat absorbing polymers  
[NASA-CASE-NPO-11609-2] c 27 N77-31308  
In-situ laser retorting of oil shale  
[NASA-CASE-LEW-12217-1] c 43 N78-14452  
Crude oil desulfurization  
[NASA-CASE-NPO-14542-1] c 25 N82-23282  
Solar heated oil shale pyrolysis process  
[NASA-CASE-NPO-16392-1] c 25 N86-25428

### OILS

Method of recording a gas flow pattern Patent  
[NASA-CASE-XMF-01779] c 12 N71-20815  
Oil and fat absorbing polymers  
[NASA-CASE-NPO-11609-2] c 27 N77-31308

**OMNIDIRECTIONAL ANTENNAS**

- Omnidirectional microwave spacecraft antenna Patent  
[NASA-CASE-XLA-03114] c 09 N71-22888
- Stacked array of omnidirectional antennas  
[NASA-CASE-LAR-10545-1] c 09 N72-21244
- Omnidirectional slot antenna for mounting on cylindrical space vehicle  
[NASA-CASE-LAR-10163-1] c 09 N72-25247

**ON-LINE SYSTEMS**

- Self-checking on-line testable static RAM  
[NASA-CASE-NPO-17939-1-CU] c 60 N90-26518

**ONBOARD EQUIPMENT**

- Survival couch Patent  
[NASA-CASE-XLA-00118] c 05 N70-33285
- Cryogenic storage system Patent  
[NASA-CASE-XMS-04390] c 31 N70-41871
- Fiber optic vibration transducer and analyzer Patent  
[NASA-CASE-XMF-02433] c 14 N71-10616
- Satellite appendage tie down cord Patent  
[NASA-CASE-XGS-02554] c 31 N71-21064
- Satellite aided vehicle avoidance system Patent  
[NASA-CASE-ERC-10090] c 21 N71-24948
- A dc servosystem including an ac motor Patent  
[NASA-CASE-NPO-10700] c 07 N71-33613
- Collapsible Apollo couch  
[NASA-CASE-MS-C-13140] c 05 N72-11085
- Monostable multivibrator  
[NASA-CASE-GSC-10082-1] c 10 N72-20221
- Delayed simultaneous release mechanism  
[NASA-CASE-GSC-10814-1] c 03 N73-20039
- Electronic strain-level counter  
[NASA-CASE-LAR-10756-1] c 32 N73-26910
- Magnetic heading reference  
[NASA-CASE-LAR-11387-1] c 04 N76-20114

**OPEN CHANNEL FLOW**

- Monogroove heat pipe design: Insulated liquid channel with bridging wick  
[NASA-CASE-MS-C-20487-1] c 34 N85-29180

**OPERATING TEMPERATURE**

- Solar cell having improved back surface reflector  
[NASA-CASE-LEW-13620-1] c 44 N83-13579

**OPERATIONAL AMPLIFIERS**

- Digital automatic gain amplifier  
[NASA-CASE-KSC-11008-1] c 33 N79-22373
- Automatic level control circuit  
[NASA-CASE-KSC-11170-1] c 33 N83-36356
- Phase detector for three-phase power factor controller  
[NASA-CASE-MFS-25854-1] c 33 N84-27975
- Temperature sensitive oscillator  
[NASA-CASE-GSC-12958-1] c 33 N86-32624

**OPHTHALMOLOGY**

- Ophthalmic method and apparatus  
[NASA-CASE-LEW-11669-1] c 05 N73-27062
- Ophthalmic liquification pump  
[NASA-CASE-LEW-12051-1] c 52 N75-33640

**OPTICAL COMMUNICATION**

- Retrodirective optical system  
[NASA-CASE-XGS-04480] c 16 N69-27491
- Optical communications system Patent  
[NASA-CASE-XLA-01090] c 07 N71-12389
- Optical frequency waveguide and transmission system Patent  
[NASA-CASE-HQN-10541-4] c 16 N71-27183
- High pulse rate high resolution optical radar system  
[NASA-CASE-NPO-11426] c 07 N73-26119
- Apparatus for simulating optical transmission links  
[NASA-CASE-GSC-11877-1] c 74 N76-18913
- Fiber distributed feedback laser  
[NASA-CASE-NPO-13531-1] c 36 N76-24553
- Polarization compensator for optical communications  
[NASA-CASE-GSC-11782-1] c 74 N76-30053
- Gregorian all-reflective optical system  
[NASA-CASE-GSC-12058-1] c 74 N77-26942
- Wideband heterodyne receiver for laser communication system  
[NASA-CASE-GSC-12053-1] c 32 N77-28346
- Fiber optic multiplex optical transmission system  
[NASA-CASE-KSC-11047-1] c 74 N78-14889
- Fiber optic crossbar switch for automatically patching optical signals  
[NASA-CASE-KSC-11104-1] c 74 N83-29032
- Synchronization tracking in pulse position modulation receiver  
[NASA-CASE-NPO-16256-1] c 32 N87-21207
- Optical shutter switching matrix  
[NASA-CASE-KSC-11392-1] c 74 N90-22383

**OPTICAL COUPLING**

- Automatic quadrature control and measuring system — using optical coupling circuitry  
[NASA-CASE-MFS-21660-1] c 35 N74-21017
- Optical fiber coupling method and apparatus  
[NASA-CASE-NPO-15464-1] c 74 N85-29749

**OPTICAL DATA PROCESSING**

- Optical data processing using paraboloidal mirror segments  
[NASA-CASE-GSC-11296-1] c 23 N73-30666

**Recorder/processor apparatus — for optical data**

- processing  
[NASA-CASE-GSC-11553-1] c 35 N74-15831
- Multibeam single frequency synthetic aperture radar processor for imaging separate range swaths  
[NASA-CASE-NPO-14525-1] c 32 N79-19195
- Interleaving device  
[NASA-CASE-GSC-12111-2] c 33 N81-29342
- Real-time multiple-look synthetic aperture radar processor for spacecraft applications  
[NASA-CASE-NPO-14054-1] c 32 N82-12297
- Multibeam single frequency synthetic aperture radar processor for imaging separate range swaths  
[NASA-CASE-NPO-14525-2] c 32 N83-31918
- Optical stereo video signal processor  
[NASA-CASE-MFS-25752-1] c 74 N86-21348
- Remotely controllable real-time optical processor  
[NASA-CASE-NPO-16750-1-CU] c 74 N89-14078

**OPTICAL DENSITY**

- Medical diagnosis system and method with multispectral imaging — depth of burns and optical density of the skin  
[NASA-CASE-NPO-14402-1] c 52 N81-27783
- Laser schlieren crystal monitor  
[NASA-CASE-MFS-28060-1] c 76 N87-25862

**OPTICAL EMISSION SPECTROSCOPY**

- Maksutov spectrograph Patent  
[NASA-CASE-XLA-10402] c 14 N71-29041
- Method and apparatus for determining optical absorption and emission characteristics of a crystal or non-crystalline fiber  
[NASA-CASE-LAR-13963-1] c 76 N90-24150

**OPTICAL EQUIPMENT**

- Light detection instrument Patent  
[NASA-CASE-XGS-05534] c 23 N71-16355
- Optical characteristics measuring apparatus Patent  
[NASA-CASE-XNP-08840] c 23 N71-16365
- Combined optical attitude and altitude indicating instrument Patent  
[NASA-CASE-XLA-01907] c 14 N71-23268
- Laser grating interferometer Patent  
[NASA-CASE-XLA-04295] c 16 N71-24170
- Optical mirror apparatus Patent  
[NASA-CASE-ERC-10001] c 23 N71-24868
- Method for generating ultra-precise angles Patent  
[NASA-CASE-XGS-04173] c 19 N71-26674
- Petzval type objective including field shaping lens Patent  
[NASA-CASE-GSC-10700] c 23 N71-30027
- Compact spectroradiometer  
[NASA-CASE-HQN-10683] c 14 N71-34389
- Fine adjustment mount  
[NASA-CASE-MFS-20249] c 15 N72-11386
- Method of coating solar cell with borosilicate glass and resultant product  
[NASA-CASE-GSC-11514-1] c 03 N72-24037
- Light sensor  
[NASA-CASE-NPO-11311] c 14 N72-25414
- Boreoscope with variable angle scope  
[NASA-CASE-MFS-15162] c 14 N72-32452
- Cyclically operable optical shutter  
[NASA-CASE-NPO-10758] c 14 N73-14427
- Star tracking reticles and process for the production thereof  
[NASA-CASE-GSC-11188-2] c 21 N73-19630
- Infrared horizon locator  
[NASA-CASE-LAR-10726-1] c 14 N73-20475
- Multiple pass reimaging optical system  
[NASA-CASE-ARC-10194-1] c 23 N73-20741
- Attitude sensor  
[NASA-CASE-LAR-10586-1] c 19 N74-15089
- Formation of star tracking reticles  
[NASA-CASE-GSC-11188-3] c 74 N74-20008
- Method and apparatus for optically monitoring the angular position of a rotating mirror  
[NASA-CASE-GSC-11353-1] c 74 N74-21304
- Single reflector interference spectrometer and drive system therefor  
[NASA-CASE-NPO-11932-1] c 35 N74-23040
- Strain gauge ambiguity sensor for segmented mirror active optical system  
[NASA-CASE-MFS-20506-1] c 35 N75-12273
- Optical alignment device  
[NASA-CASE-ARC-10932-1] c 74 N76-22993
- Visual examination apparatus  
[US-PATENT-RE-28,921] c 52 N76-30793
- Optical instrument employing reticle having preselected visual response pattern formed thereon  
[NASA-CASE-ARC-10976-1] c 74 N77-22950
- Opto-mechanical subsystem with temperature compensation through isothermal design  
[NASA-CASE-GSC-12059-1] c 35 N77-27366
- Method and apparatus for producing an image from a transparent object  
[NASA-CASE-GSC-11889-1] c 74 N77-28932
- Method of treating the surface of a glass member  
[NASA-CASE-GSC-12110-1] c 27 N77-32308

- Process for producing a well-adhered durable optical coating on an optical plastic substrate — abrasion resistant polymethyl methacrylate lenses  
[NASA-CASE-ARC-11039-1] c 74 N78-32854
- Water system virus detection  
[NASA-CASE-MS-C-16098-1] c 51 N79-10693
- Method of forming a sharp edge on an optical device  
[NASA-CASE-GSC-12348-1] c 74 N80-24149
- Rhomboid prism pair for rotating the plane of parallel light beams  
[NASA-CASE-ARC-11311-1] c 74 N83-13978
- High speed multi focal plane optical system  
[NASA-CASE-GSC-12683-1] c 74 N83-36898
- Optical system  
[NASA-CASE-NPO-15801-1] c 74 N85-23396
- High-temperature, high-pressure optical cell  
[NASA-CASE-MFS-26000-1] c 74 N87-14971

**OPTICAL FIBERS**

- Method and apparatus for determining optical absorption and emission characteristics of a crystal or non-crystalline fiber  
[NASA-CASE-LAR-13963-1] c 76 N90-24150

**OPTICAL FILTERS**

- High temperature lens construction Patent  
[NASA-CASE-XNP-04111] c 14 N71-15622
- Method and apparatus for eliminating coherent noise in a coherent energy imaging system without destroying spatial coherence  
[NASA-CASE-GSC-11133-1] c 23 N72-11568
- Optical noise suppression device and method — laser light exposing film  
[NASA-CASE-MS-C-12640-1] c 74 N76-31998
- System for producing chroma signals  
[NASA-CASE-MS-C-14883-1] c 74 N77-18893
- Optical conversion method — for spacecraft television  
[NASA-CASE-MS-C-12618-1] c 74 N78-17865
- Partial polarizer filter  
[NASA-CASE-GSC-12225-1] c 74 N79-14891
- Portable reflectance spectrometer  
[NASA-CASE-NPO-13556-1] c 35 N84-33766
- Multispectral linear array multiband selection device  
[NASA-CASE-GSC-12911-1] c 74 N86-29650
- Method and apparatus for making an optical element having a dielectric film  
[NASA-CASE-ARC-11611-1] c 74 N87-28416

**OPTICAL GYROSCOPES**

- Optical gyroscope system  
[NASA-CASE-NPO-14258-1] c 35 N81-33448
- Laser pulse detection method and apparatus  
[NASA-CASE-NPO-16030-1] c 36 N84-25037
- Closed loop fiber optic rotation sensor  
[NASA-CASE-NPO-16558-1-CU] c 74 N87-23259

**OPTICAL HETERODYNING**

- Multispectral imaging system  
[NASA-CASE-MS-C-12404-1] c 23 N73-13661
- Gregorian all-reflective optical system  
[NASA-CASE-GSC-12058-1] c 74 N77-26942
- Wideband heterodyne receiver for laser communication system  
[NASA-CASE-GSC-12053-1] c 32 N77-28346

**OPTICAL MATERIALS**

- Process for producing a well-adhered durable optical coating on an optical plastic substrate — abrasion resistant polymethyl methacrylate lenses  
[NASA-CASE-ARC-11039-1] c 74 N78-32854
- Containerless high purity pulling process and apparatus for glass fiber  
[NASA-CASE-MFS-25905-2] c 31 N86-21718

**OPTICAL MEASUREMENT**

- Passive optical wind and turbulence detection system Patent  
[NASA-CASE-XMF-14032] c 20 N71-16340
- Ellipsoidal mirror reflectometer including means for averaging the radiation reflected from the sample Patent  
[NASA-CASE-XGS-05291] c 23 N71-16341
- Single reflector interference spectrometer and drive system therefor  
[NASA-CASE-NPO-11932-1] c 35 N74-23040
- Hybrid holographic non-destructive test system  
[NASA-CASE-MFS-23114-1] c 38 N78-32447
- Plural output optometric sample cell and analysis system  
[NASA-CASE-NPO-10233-1] c 74 N78-33913
- Film advance indicator  
[NASA-CASE-LAR-12474-1] c 35 N82-26628
- Interferometric angle monitor  
[NASA-CASE-GSC-12614-1] c 74 N83-32577
- Rotary target V-block  
[NASA-CASE-LAR-12007-3] c 35 N84-16523
- Portable reflectance spectrometer  
[NASA-CASE-NPO-13556-1] c 35 N84-33766
- Optical multiple sample vacuum integrating sphere  
[NASA-CASE-GSC-12849-1] c 74 N86-26190

## OPTICAL MEASURING INSTRUMENTS

- Optically pumped resonance magnetometer for determining vectoral components in a spatial coordinate system Patent  
[NASA-CASE-XGS-04879] c 14 N71-20428
- Optical machine tool alignment indicator Patent  
[NASA-CASE-XAC-09489-1] c 15 N71-26673
- Optical systems having spatially invariant outputs  
[NASA-CASE-ERC-10248] c 14 N72-17323
- Optical probing of supersonic flows with statistical correlation  
[NASA-CASE-MFS-20642] c 14 N72-21407
- Multiparameter vision testing apparatus  
[NASA-CASE-MS-C-13601-2] c 54 N75-27759
- Noncontacting method for measuring angular deflection  
[NASA-CASE-LAR-12178-1] c 74 N80-21138
- Visible and infrared polarization ratio spectrophotometer  
[NASA-CASE-LAR-12285-1] c 35 N80-28687
- Interferometer  
[NASA-CASE-NPO-14502-1] c 74 N81-17888
- Optical crystal temperature gauge with fiber optic connections  
[NASA-CASE-MS-C-18627-1] c 74 N82-30071
- Optical fiber tactile sensor  
[NASA-CASE-NPO-15375-1] c 74 N84-11921
- Optical distance measuring instrument  
[NASA-CASE-GSC-12761-1] c 74 N86-32266
- Vibration-free Raman Doppler velocimeter  
[NASA-CASE-LAR-13268-1] c 35 N87-14669
- Phase length optical phase-locked-loop sensor  
[NASA-CASE-LAR-13387-1] c 74 N88-25302
- OPTICAL PATHS**
- Optical instruments  
[NASA-CASE-MS-C-14096-1] c 74 N74-15095
- Large volume multiple-path nuclear pumped laser  
[NASA-CASE-LAR-12592-1] c 36 N82-13415
- Phase length optical phase-locked-loop sensor  
[NASA-CASE-LAR-13387-1] c 74 N88-25302
- Optical shutter switching matrix  
[NASA-CASE-KSC-11392-1] c 74 N90-22383
- OPTICAL POLARIZATION**
- Real-time image difference detection using a polarization rotation spatial light modulator  
[NASA-CASE-NPO-17144-1-CU] c 74 N88-25305
- OPTICAL PROPERTIES**
- Optical torque meter Patent  
[NASA-CASE-XLE-00503] c 14 N70-34818
- Quasi-optical microwave component Patent  
[NASA-CASE-ERC-10011] c 07 N71-29065
- Light sensor  
[NASA-CASE-NPO-11311] c 14 N72-25414
- Light direction sensor  
[NASA-CASE-NPO-11201] c 14 N72-27409
- Device and method for determining X ray reflection efficiency of optical surfaces  
[NASA-CASE-MFS-20243] c 23 N73-13662
- Formation of star tracking reticles  
[NASA-CASE-GSC-11188-3] c 74 N74-20008
- Optically actuated two position mechanical mover  
[NASA-CASE-NPO-13105-1] c 37 N74-21060
- Modification of the electrical and optical properties of polymers — ion irradiation to create texture  
[NASA-CASE-LEW-13027-1] c 27 N80-24437
- OPTICAL PUMPING**
- Optical pump and driver system for lasers  
[NASA-CASE-ERC-10283] c 16 N72-25485
- Laser head for simultaneous optical pumping of several dye lasers — with single flash lamp  
[NASA-CASE-LAR-11341-1] c 36 N75-19655
- Stabilization of He2(a 3 Sigma u+ molecules in liquid helium by optical pumping for vacuum UV laser 6  
[NASA-CASE-NPO-13993-1] c 72 N79-13826
- Active lamp pulse driver circuit — optical pumping of laser media  
[NASA-CASE-GSC-12566-1] c 33 N83-34189
- Off-axis coherently pumped laser  
[NASA-CASE-GSC-12592-1] c 36 N84-28065
- OPTICAL PYROMETERS**
- Motion picture camera for optical pyrometry Patent  
[NASA-CASE-XLA-00062] c 14 N70-33254
- OPTICAL RADAR**
- Acquisition and tracking system for optical radar  
[NASA-CASE-MFS-20125] c 16 N72-13437
- OPTICAL RANGE FINDERS**
- Altitude sensing device  
[NASA-CASE-XMS-01994-1] c 14 N72-17326
- Optical range finder having nonoverlapping complete images  
[NASA-CASE-MS-C-12105-1] c 14 N72-21409
- OPTICAL REFLECTION**
- Hybrid holographic system using reflected and transmitted object beams simultaneously Patent  
[NASA-CASE-MFS-20074] c 16 N71-15565

- Method for generating ultra-precise angles Patent  
[NASA-CASE-XGS-04173] c 19 N71-26674
- Illumination system including a virtual light source Patent  
[NASA-CASE-HQN-10781] c 23 N71-30292
- Diffuse reflective coating  
[NASA-CASE-GSC-11214-1] c 06 N73-13128
- Gregorian all-reflective optical system  
[NASA-CASE-GSC-12058-1] c 74 N77-26942
- Lightweight reflector assembly  
[NASA-CASE-NPO-13707-1] c 74 N77-28933
- Method and apparatus for splitting a beam of energy — optical communication  
[NASA-CASE-GSC-12083-1] c 73 N78-32848
- Apparatus for and method of compensating dynamic unbalance  
[NASA-CASE-GSC-12550-1] c 37 N84-28082
- Phase length optical phase-locked-loop sensor  
[NASA-CASE-LAR-13387-1] c 74 N88-25302
- OPTICAL RESONANCE**
- Optically pumped resonance magnetometer for determining vectoral components in a spatial coordinate system Patent  
[NASA-CASE-XGS-04879] c 14 N71-20428
- Laser system with an antiresonant optical ring  
[NASA-CASE-HQN-10844-1] c 36 N75-19653
- OPTICAL SCANNERS**
- Optical spin compensator  
[NASA-CASE-XGS-02401] c 14 N69-27485
- Optical inspection apparatus Patent  
[NASA-CASE-XMF-00462] c 14 N70-34298
- Electro-optical scanning apparatus Patent Application  
[NASA-CASE-NPO-11106] c 14 N70-34697
- Multi-lobar scan horizon sensor Patent  
[NASA-CASE-XGS-00809] c 21 N70-35427
- Optical binocular scanning apparatus  
[NASA-CASE-NPO-11002] c 14 N72-22441
- Spacecraft attitude sensor  
[NASA-CASE-GSC-10890-1] c 21 N73-30640
- Optical instruments  
[NASA-CASE-MS-C-14096-1] c 74 N74-15095
- Dual digital video switcher  
[NASA-CASE-KSC-10782-1] c 33 N75-30431
- Traffic survey system — using optical scanners  
[NASA-CASE-MFS-22631-1] c 66 N76-19888
- Optical scanner — laser doppler velocimeters  
[NASA-CASE-LAR-11711-1] c 74 N78-17866
- Device for measuring the contour of a surface  
[NASA-CASE-LAR-11869-1] c 74 N78-27904
- Velocity servo for continuous scan Fourier interference spectrometer  
[NASA-CASE-NPO-14093-1] c 35 N80-20563
- Method of growing a ribbon crystal particularly suited for facilitating automated control of ribbon width  
[NASA-CASE-NPO-14295-1] c 76 N80-32245
- Scanning afocal laser velocimeter projection lens system  
[NASA-CASE-LAR-12328-1] c 36 N82-32712
- Optical scanner  
[NASA-CASE-GSC-12897-1] c 74 N87-21679
- Induction-type metal detector with increased scanning area capability  
[NASA-CASE-KSC-11386-1] c 35 N90-22023
- OPTICAL SWITCHING**
- Optical shutter switching matrix  
[NASA-CASE-KSC-11392-1] c 74 N90-22383
- OPTICAL TRACKING**
- Sun tracker with rotatable plane-parallel plate and two photocells Patent  
[NASA-CASE-XGS-01159] c 21 N71-10678
- Optical tracker having overlapping reticles on parallel axes Patent  
[NASA-CASE-XGS-05715] c 23 N71-16100
- Optical tracking mount Patent  
[NASA-CASE-MFS-14017] c 14 N71-26627
- Solar tracking system  
[NASA-CASE-MFS-23999-1] c 44 N81-24520
- Longwall shearer tracking system  
[NASA-CASE-MFS-25717-1] c 35 N84-33768
- Retinally stabilized differential resolution television display  
[NASA-CASE-NPO-15432-1] c 32 N85-29117
- Optical stereo video signal processor  
[NASA-CASE-MFS-25752-1] c 74 N86-21348
- Real-time optical multiple object recognition and tracking system and method  
[NASA-CASE-NPO-17139-1-CU] c 74 N88-25301
- OPTICAL TRANSFER FUNCTION**
- Electronic optical transfer function analyzer  
[NASA-CASE-MFS-21672-1] c 74 N76-19935
- OPTICAL WAVEGUIDES**
- Fiber optic transmission line stabilization apparatus and method  
[NASA-CASE-NPO-15036-1] c 74 N82-19029

## OPTIMIZATION

- Maximum power point tracker Patent  
[NASA-CASE-GSC-10376-1] c 14 N71-27407
- OPTOELECTRONIC DEVICES**
- Television monitor field shifter and an opto-electronic method for obtaining a stereo image of optimal depth resolution and reduced depth distortion on a single screen  
[NASA-CASE-NPO-17249-1-CU] c 32 N89-28676
- OPTOGALVANIC SPECTROSCOPY**
- Discharge cell for optogalvanic spectroscopy having orthogonal relationship between the probe laser and discharge axis  
[NASA-CASE-NPO-16271-1] c 35 N86-25753
- ORAL HYGIENE**
- Acoustic tooth cleaner  
[NASA-CASE-LAR-12471-1] c 52 N82-29862
- ORBIT TRANSFER VEHICLES**
- Tanker orbit transfer vehicle and method  
[NASA-CASE-MS-C-20543-1] c 18 N84-22610
- ORBITAL ASSEMBLY**
- Structural members, method and apparatus  
[NASA-CASE-MS-C-16217-1] c 31 N81-27323
- Beam connector apparatus and assembly  
[NASA-CASE-MFS-25134-1] c 31 N83-31895
- Space spider crane  
[NASA-CASE-LAR-13411-1-SB] c 18 N88-23828
- Bi-stem gripping apparatus  
[NASA-CASE-MFS-28185-1] c 37 N88-23979
- Mobile remote manipulator system for a tetrahedral truss  
[NASA-CASE-MS-C-20985-1] c 18 N88-26398
- Mechanized fluid connector and assembly tool system  
[NASA-CASE-MS-C-21434-1] c 37 N90-17138
- ORBITAL LAUNCHING**
- Space probe/satellite ejection apparatus for spacecraft  
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- ORBITAL MANEUVERING VEHICLES**
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Phase detector assembly Patent  
[NASA-CASE-XMF-00701] c 09 N70-40272

Bi-polar phase detector and corrector for split phase PCM data signals Patent  
[NASA-CASE-XGS-01590] c 07 N71-12392

High speed phase detector Patent  
[NASA-CASE-XNP-01306-2] c 09 N71-24596

Phase protection system for ac power lines  
[NASA-CASE-MSC-17832-1] c 33 N74-14956

Low distortion automatic phase control circuit — voltage controlled phase shifter  
[NASA-CASE-MFS-21671-1] c 33 N74-22885

Correlation type phase detector — with time correlation integrator for frequency multiplexed signals  
[NASA-CASE-GSC-11744-1] c 33 N75-26243

Impact position detector for outer space particles  
[NASA-CASE-GSC-11829-1] c 35 N75-27331

Frequency discriminator and phase detector circuit  
[NASA-CASE-NPO-11515-1] c 33 N77-13315

Phase substitution of spare converter for a failed one of parallel phase staggered converters  
[NASA-CASE-NPO-13812-1] c 33 N77-30365

- Apparatus and method for stabilized phase detection for binary signal tracking loops  
[NASA-CASE-MSC-16461-1] c 33 N79-11313
- High stability buffered phase comparator  
[NASA-CASE-GSC-12645-1] c 33 N84-16454
- Three phase power factor controller  
[NASA-CASE-MFS-25535-2] c 33 N84-22885
- Method and apparatus for receiving and tracking phase modulated signals  
[NASA-CASE-MSC-16170-2] c 32 N84-27952
- Phase detector for three-phase power factor controller  
[NASA-CASE-MFS-25854-1] c 33 N84-27975
- Maser cavity servo-tuning system  
[NASA-CASE-NPO-15890-1-CU] c 33 N85-29143
- Double reference pulsed phase locked loop  
[NASA-CASE-LAR-13310-1] c 32 N87-14559
- Method and apparatus for measuring frequency and phase difference  
[NASA-CASE-MSC-20865-1] c 32 N87-18692
- Zero-G phase detector and separator  
[NASA-CASE-LEW-14844-1] c 35 N90-22024
- PHASE DEVIATION**
- System for stabilizing cable phase delay utilizing a coaxial cable under pressure  
[NASA-CASE-NPO-13138-1] c 33 N74-17927
- PHASE ERROR**
- Modified fast frequency acquisition via adaptive least squares algorithm  
[NASA-CASE-NPO-17845-1-CU] c 61 N90-27341
- PHASE LOCK DEMODULATORS**
- Compensating bandwidth switching transients in an amplifier circuit Patent  
[NASA-CASE-XNP-01107] c 10 N71-28859
- Phase ambiguity resolution for offset QPSK modulation systems  
[NASA-CASE-NPO-17853-1-CU] c 32 N90-16975
- PHASE LOCKED SYSTEMS**
- Automatic acquisition system for phase-locked loop  
[NASA-CASE-XGS-04994] c 09 N69-21543
- Phase-locked loop with sideband rejecting properties Patent  
[NASA-CASE-XNP-02723] c 07 N70-41680
- Automatic frequency discriminators and control for a phase-locked loop providing frequency preset capabilities Patent  
[NASA-CASE-XMF-08665] c 10 N71-19467
- Burst synchronization detection system Patent  
[NASA-CASE-XMS-05605-1] c 10 N71-19468
- Phase demodulation system with two phase locked loops Patent  
[NASA-CASE-XNP-00777] c 10 N71-19469
- Diversity receiving system with diversity phase lock Patent  
[NASA-CASE-XGS-01222] c 10 N71-20841
- Phase locked phase modulator including a voltage controlled oscillator Patent  
[NASA-CASE-XNP-05382] c 10 N71-23544
- Video sync processor Patent  
[NASA-CASE-KSC-10002] c 10 N71-25865
- Transition tracking bit synchronization system  
[NASA-CASE-NPO-10844] c 07 N72-20140
- Data-aided carrier tracking loops  
[NASA-CASE-NPO-11282] c 10 N73-16205
- Filter for third order phase locked loops  
[NASA-CASE-NPO-11941-1] c 10 N73-27171
- Receiver with an improved phase lock loop in a multichannel telemetry system with suppressed carrier  
[NASA-CASE-NPO-11593-1] c 07 N73-28012
- Automatic carrier acquisition system  
[NASA-CASE-NPO-11628-1] c 07 N73-30113
- Digital second-order phase-locked loop  
[NASA-CASE-NPO-11905-1] c 33 N74-12887
- Phase-locked servo system — for synchronizing the rotation of slip ring assembly  
[NASA-CASE-MFS-22073-1] c 33 N75-13139
- Low speed phase-locked speed control system — for brushless dc motor  
[NASA-CASE-GSC-11127-1] c 09 N75-24758
- Digital phase-locked loop  
[NASA-CASE-GSC-11623-1] c 33 N75-25040
- Telemetry synchronizer  
[NASA-CASE-GSC-11868-1] c 17 N76-22245
- Linear phase demodulator including a phase locked loop with auxiliary feedback loop  
[NASA-CASE-GSC-12018-1] c 33 N77-14334
- Frequency translating phase conjugation circuit for active retrodirective antenna array — microwave transmission  
[NASA-CASE-NPO-14536-1] c 32 N81-14185
- PN lock indicator for dithered PN code tracking loop  
[NASA-CASE-NPO-14435-1] c 33 N81-33405
- Discriminator aided phase lock acquisition for suppressed carrier signals  
[NASA-CASE-NPO-14311-1] c 33 N82-29539
- Pulsed phase locked loop strain monitor — voltage controlled oscillators  
[NASA-CASE-LAR-12772-1] c 33 N83-16626
- Double reference pulsed phase locked loop  
[NASA-CASE-LAR-13310-1] c 32 N87-14559
- Means for phase locking the outputs of a surface emitting laser diode array  
[NASA-CASE-NPO-16542-1-CU] c 36 N87-23960
- Processing circuit with asymmetry corrector and convolutional encoder for digital data  
[NASA-CASE-MSC-20187-1] c 33 N87-25531
- Phase length optical phase-locked-loop sensor  
[NASA-CASE-LAR-13387-1] c 74 N88-25302
- Digital phase-lock loop having an estimator and predictor of error  
[NASA-CASE-NPO-17186-1-CU] c 32 N88-29076
- Direct drive robotic hand  
[NASA-CASE-NPO-17917-1-CU] c 37 N90-26339
- PHASE MODULATION**
- Phase quadrature-plural channel data transmission system Patent  
[NASA-CASE-XAC-06302] c 08 N71-19763
- Adaptive tracking notch filter system Patent  
[NASA-CASE-XMF-01892] c 10 N71-22986
- Phase locked phase modulator including a voltage controlled oscillator Patent  
[NASA-CASE-XNP-05382] c 10 N71-23544
- Phase multiplying electronic scanning system Patent  
[NASA-CASE-NPO-10302] c 10 N71-26142
- Phase modulator Patent  
[NASA-CASE-MSC-13201-1] c 07 N71-28429
- Two carrier communication system with single transmitter  
[NASA-CASE-NPO-11548] c 07 N73-26118
- Decision feedback loop for tracking a polyphase modulated carrier  
[NASA-CASE-NPO-13103-1] c 32 N74-20811
- Modulator for tone and binary signals — phase of modulation of tone and binary signals on carrier waves in communication systems  
[NASA-CASE-GSC-11743-1] c 32 N75-24981
- Phase modulating with odd and even finite power series of a modulating signal  
[NASA-CASE-LAR-11607-1] c 32 N77-14292
- Swept group delay measurement  
[NASA-CASE-NPO-13909-1] c 33 N78-25319
- Quadrature demodulation  
[NASA-CASE-GSC-12137-1] c 33 N78-32338
- Closed Loop solar array-ion thruster system with power control circuitry  
[NASA-CASE-LEW-12780-1] c 20 N79-20179
- Baseband signal combiner for large aperture antenna array  
[NASA-CASE-NPO-14641-1] c 32 N81-29308
- Doppler radar having phase modulation of both transmitted and reflected return signals  
[NASA-CASE-MSC-18675-1] c 32 N84-22820
- Method and apparatus for receiving and tracking phase modulated signals  
[NASA-CASE-MSC-16170-2] c 32 N84-27952
- Integrating IR detector imaging systems  
[NASA-CASE-NPO-15805-1] c 74 N84-28590
- PHASE SHIFT**
- Bi-polar phase detector and corrector for split phase PCM data signals Patent  
[NASA-CASE-XGS-01590] c 07 N71-12392
- Electromagnetic polarization systems and methods Patent  
[NASA-CASE-GSC-10021-1] c 09 N71-24595
- Method and apparatus for frequency-division multiplex communications by digital phase shift of carrier  
[NASA-CASE-NPO-11338] c 08 N72-25208
- Time domain phase measuring apparatus  
[NASA-CASE-GSC-12228-1] c 33 N79-10338
- Phase-angle controller for Stirling engines  
[NASA-CASE-NPO-14388-1] c 37 N81-17432
- JFET reflection oscillator  
[NASA-CASE-GSC-12555-1] c 33 N86-19515
- Double reference pulsed phase locked loop  
[NASA-CASE-LAR-13310-1] c 32 N87-14559
- Ground plane interference elimination by passive element  
[NASA-CASE-NPO-16632-1-CU] c 32 N87-15390
- Method and apparatus for measuring minority carrier lifetime in a direct band-gap semiconductor  
[NASA-CASE-NPO-16337-1-CU] c 33 N87-22894
- Doppler radar with multiphase modulation of transmitted and reflected signal  
[NASA-CASE-MSC-18808-1] c 32 N90-20280
- PHASE SHIFT CIRCUITS**
- Gyrator type circuit Patent  
[NASA-CASE-XAC-10608-1] c 09 N71-12517
- Phase shift circuit apparatus  
[NASA-CASE-ARC-10269-1] c 10 N72-16172
- Continuously variable voltage controlled phase shifter  
[NASA-CASE-NPO-11129] c 09 N72-33204
- Induction motor control system with voltage controlled oscillator circuit  
[NASA-CASE-MFS-21465-1] c 10 N73-32145
- Low distortion automatic phase control circuit — voltage controlled phase shifter  
[NASA-CASE-MFS-21671-1] c 33 N74-22885
- Pseudonoise code tracking loop  
[NASA-CASE-MSC-18035-1] c 32 N81-15179
- Fiber optic transmission line stabilization apparatus and method  
[NASA-CASE-NPO-15036-1] c 74 N82-19029
- PHASE SHIFT KEYING**
- Decision feedback loop for tracking a polyphase modulated carrier  
[NASA-CASE-NPO-13103-1] c 32 N74-20811
- Differential phase shift keyed communication system  
[NASA-CASE-MSC-14085-1] c 32 N74-26654
- Differential phase shift keyed signal resolver  
[NASA-CASE-MSC-14066-1] c 33 N74-27705
- Unbalanced quadrature demodulator  
[NASA-CASE-MSC-14840-1] c 32 N77-24331
- Method and apparatus for quadrature-shift-key and linear phase modulation  
[NASA-CASE-NPO-14444-1] c 33 N81-15192
- Digital demodulator  
[NASA-CASE-LAR-12659-1] c 33 N82-26570
- Doppler-corrected differential detection system  
[NASA-CASE-NPO-16987-1-CU] c 32 N88-30001
- Phase ambiguity resolution for offset QPSK modulation systems  
[NASA-CASE-NPO-17853-1-CU] c 32 N90-16975
- PHASE SWITCHING INTERFEROMETERS**
- Radar antenna system for acquisition and tracking Patent  
[NASA-CASE-XMS-09610] c 07 N71-24625
- PHASE TRANSFORMATIONS**
- Slug flow magnetohydrodynamic generator  
[NASA-CASE-XLE-02083] c 03 N69-39983
- Fluid dispensing apparatus and method Patent  
[NASA-CASE-XLE-01182] c 27 N71-15635
- Ten degree Kelvin hydride refrigerator  
[NASA-CASE-NPO-16393-1-CU] c 31 N87-21159
- PHASE VELOCITY**
- Ultrasonic calibration device — for producing changes in acoustic attenuation and phase velocity  
[NASA-CASE-LAR-11435-1] c 35 N76-15432
- PHASED ARRAYS**
- Phase control circuits using frequency multiplications for phased array antennas  
[NASA-CASE-ERC-10285] c 10 N73-16206
- Phased array antenna control  
[NASA-CASE-MSC-14939-1] c 32 N79-11264
- Phase conjugation method and apparatus for an active retrodirective antenna array  
[NASA-CASE-NPO-13641-1] c 32 N79-24210
- Coaxial phased array antenna  
[NASA-CASE-MSC-16800-1] c 32 N81-14187
- Spiral slotted phased antenna array  
[NASA-CASE-MSC-18532-1] c 32 N82-27558
- Method and apparatus for self-calibration and phasing of array antenna  
[NASA-CASE-NPO-15920-1] c 33 N85-21493
- Ground plane interference elimination by passive element  
[NASA-CASE-NPO-16632-1-CU] c 32 N87-15390
- PHENOLIC RESINS**
- Bonding method in the manufacture of continuous regression rate sensor devices  
[NASA-CASE-LAR-10337-1] c 24 N75-30260
- Fire and heat resistant laminating resins based on maleimido substituted aromatic cyclotriphosphazene polymer  
[NASA-CASE-ARC-11428-2] c 27 N87-16909
- PHENOLS**
- Novel polymers and method of preparing same  
[NASA-CASE-NPO-10998-1] c 06 N73-32029
- Method and device for the detection of phenol and related compounds — in an electrochemical cell  
[NASA-CASE-LEW-12513-1] c 25 N79-22235
- PHENYLS**
- The 1,1,1-triary-2,2,2-trifluoroethanes and process for their synthesis  
[NASA-CASE-ARC-11097-1] c 25 N82-24312
- Bis(4-(3,4-dimethylenepyrrolydyl)-phenyl) methane  
[NASA-CASE-LAR-13965-1-CU] c 23 N90-21118
- Boron-containing organosilane polymers and ceramic materials thereof  
[NASA-CASE-ARC-11649-2-SB] c 27 N90-21177
- Acetylene terminated aspartimides and resins therefrom  
[NASA-CASE-LAR-14188-1] c 27 N90-23545
- PHONOCARDIOGRAPHY**
- Phonocardiogram simulator Patent  
[NASA-CASE-XKS-10804] c 05 N71-24606
- Vibrophonocardiograph Patent  
[NASA-CASE-XFR-07172] c 05 N71-27234

## PHOSPHATES

Thermal control coating Patent  
[NASA-CASE-XLA-01995] c 18 N71-23047

## PHOSPHAZENE

Process for the preparation of polycarbonylphosphazenes — thermal insulation  
[NASA-CASE-ARC-11176-2] c 27 N81-27271  
Carboranylphosphazenes and their polymers — thermal insulation  
[NASA-CASE-ARC-11176-1] c 27 N82-18389  
Carboranylethylene-substituted phosphazenes and polymers thereof  
[NASA-CASE-ARC-11370-1] c 27 N84-22750  
Maleimido substituted aromatic cyclophosphazenes  
[NASA-CASE-ARC-11428-1] c 23 N86-18376  
Fire and heat resistant laminating resins based on maleimido substituted aromatic cyclophosphazene polymer  
[NASA-CASE-ARC-11428-2] c 27 N87-16909  
Aromatic cyclophosphazenes  
[NASA-CASE-ARC-11428-3] c 23 N88-24692

## PHOSPHINES

Heat resistant polymers of oxidized styrylphosphine  
[NASA-CASE-MS-C-14903-1] c 27 N78-32256  
Compound oxidized styrylphosphine — flame resistant vinyl polymers  
[NASA-CASE-MS-C-14903-2] c 27 N80-10358  
Heat resistant polymers of oxidized styrylphosphine  
[NASA-CASE-MS-C-14903-3] c 27 N80-24438  
Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-1] c 27 N83-31854  
Elastomer-modified phosphorus-containing imide resins  
[NASA-CASE-ARC-11400-1] c 27 N84-14322  
Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-2] c 27 N85-21347

## PHOSPHONITRILES

Metal containing polymers from cyclic tetrameric phenylphosphonitrimides Patent  
[NASA-CASE-HQN-10364] c 06 N71-27363

## PHOSPHORS

High contrast cathode ray tube  
[NASA-CASE-ERC-10468] c 09 N72-20206  
Thin wire pointing method  
[NASA-CASE-NPO-15789-1] c 31 N83-19947  
Flat-panel, full-color, electroluminescent display  
[NASA-CASE-LAR-13407-1] c 33 N87-28831

## PHOSPHORUS

Photoelectrochemical cells including — chalcogenophosphate photoelectrodes  
[NASA-CASE-LAR-12958-1] c 44 N84-23019  
Fire-resistant phosphorus containing polyimides and copolyimides  
[NASA-CASE-ARC-11522-2] c 27 N85-34280  
The 1-((diorganoxyphosphonyl)-methyl)-2,4- and -2,6-diamido benzenes  
[NASA-CASE-ARC-11425-4] c 23 N90-20133  
Some 1-((diorganoxyphosphonyl)methyl)-2,4- and -2,6-dinitro-benzenes  
[NASA-CASE-ARC-11425-3] c 23 N90-23475

## PHOSPHORUS COMPOUNDS

Phosphorus-containing bisimide resins  
[NASA-CASE-ARC-11321-1] c 27 N81-27272  
Polymer of phosphonylmethyl-2,4- and -2,6-diamino benzene and polyfunctional monomer  
[NASA-CASE-ARC-11506-2] c 23 N86-32525  
The 1-((diorganoxy phosphonyl) methyl)-2,4- and -2,6-diamino benzenes and their derivatives  
[NASA-CASE-ARC-11425-2] c 23 N87-28605

## PHOSPHORUS POLYMERS

Process for the preparation of polycarbonylphosphazenes — thermal insulation  
[NASA-CASE-ARC-11176-2] c 27 N81-27271  
Carboranylphosphazenes and their polymers — thermal insulation  
[NASA-CASE-ARC-11176-1] c 27 N82-18389  
Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-2] c 27 N85-21347

## PHOTOABSORPTION

Photomechanical transducer  
[NASA-CASE-NPO-14363-1] c 39 N81-25400

## PHOTOCATHODES

Photoelectric energy spectrometer Patent  
[NASA-CASE-XNP-04161] c 14 N71-15599  
III-V photocathode with nitrogen doping for increased quantum efficiency  
[NASA-CASE-NPO-12134-1] c 33 N76-31409

## PHOTOCHEMICAL REACTIONS

Apparatus for photon excited catalysis  
[NASA-CASE-NPO-13566-1] c 25 N77-32255  
Apparatus for extraction and separation of a preferentially photo-dissociated molecular isotope into positive and negative ions by means of an electric field  
[NASA-CASE-LEW-12465-1] c 25 N78-25148

Vitro-violet process for producing flame resistant polyamides and products produced thereby — protective clothing for high oxygen environments  
[NASA-CASE-MS-C-16074-1] c 27 N80-26446

## PHOTOCHROMISM

All-optical photochromic spatial light modulators based on photoinduced electron transfer in rigid matrices  
[NASA-CASE-NPO-17612-1-CU] c 74 N90-27487

## PHOTOCONDUCTIVE CELLS

Two-dimensional radiant energy array computers and computing devices  
[NASA-CASE-GSC-11839-1] c 60 N77-14751  
Plural output optometric sample cell and analysis system  
[NASA-CASE-NPO-10233-1] c 74 N78-33913  
Photocapacitive image converter  
[NASA-CASE-LAR-12513-1] c 44 N82-32841

## PHOTOCONDUCTIVITY

Photoetching of metal-oxide layers  
[NASA-CASE-ERC-10108] c 06 N72-21094

## PHOTOCONDUCTORS

Electronic divider and multiplier using photocells Patent  
[NASA-CASE-XFR-05637] c 09 N71-19480

## PHOTODIODES

Shock isolator for operating a diode laser on a closed-cycle refrigerator  
[NASA-CASE-GSC-12297-1] c 37 N79-28549  
Focal plane array optical proximity sensor  
[NASA-CASE-NPO-15155-1] c 74 N85-22139

## PHOTOASSOCIATION

Apparatus for extraction and separation of a preferentially photo-dissociated molecular isotope into positive and negative ions by means of an electric field  
[NASA-CASE-LEW-12465-1] c 25 N78-25148

## PHOTOELECTRIC CELLS

Sun tracker with rotatable plane-parallel plate and two photocells Patent  
[NASA-CASE-XGS-01159] c 21 N71-10678  
Method of and device for determining the characteristics and flux distribution of micrometeorites — scanning puncture holes in sheet material with photoelectric cell  
[NASA-CASE-NPO-12127-1] c 91 N74-13130  
Noncontacting method for measuring angular deflection  
[NASA-CASE-LAR-12178-1] c 74 N80-21138  
Photoelectric detection system — manufacturing automation  
[NASA-CASE-MFS-23776-1] c 33 N82-28545

## PHOTOELECTRIC EFFECT

Photoelectric energy spectrometer Patent  
[NASA-CASE-XNP-04161] c 14 N71-15599

## PHOTOELECTRIC EMISSION

High resolution threshold photoelectron spectroscopy by electron attachment  
[NASA-CASE-NPO-14078-1] c 72 N80-14877

## PHOTOELECTRIC MATERIALS

Light radiation direction indicator with a baffle of two parallel grids  
[NASA-CASE-XNP-03930] c 14 N69-24331  
Use of thin film light detector  
[NASA-CASE-NPO-11432-2] c 35 N74-15090  
Photoelectrochemical cells including chalcogenophosphate photoelectrodes  
[NASA-CASE-LAR-12958-1] c 44 N84-23019  
Increased voltage photovoltaic cell  
[NASA-CASE-NPO-16155-1] c 44 N85-30475

## PHOTOELECTRICITY

Photoelectrochemical cells including chalcogenophosphate photoelectrodes  
[NASA-CASE-LAR-12958-1] c 44 N84-23019

## PHOTOELECTROCHEMICAL DEVICES

Photoelectrochemical electrodes  
[NASA-CASE-NPO-15458-1] c 25 N84-12262  
Method for determining the point of zero zeta potential of semiconductor  
[NASA-CASE-LAR-12893-1] c 76 N85-30923

## PHOTOELECTRON SPECTROSCOPY

Photoelectron spectrometer with means for stabilizing sample surface potential  
[NASA-CASE-NPO-13772-1] c 35 N78-10429  
High resolution threshold photoelectron spectroscopy by electron attachment  
[NASA-CASE-NPO-14078-1] c 72 N80-14877  
Low intensity X-ray and gamma-ray spectrometer  
[NASA-CASE-GSC-12587-1] c 35 N82-32659

## PHOTOGRAPHIC EMULSIONS

Method for applying photographic resists to otherwise incompatible substrates  
[NASA-CASE-MS-C-18107-1] c 27 N81-25209  
Method for retarding dye fading during archival storage of developed color photographic film — inert atmosphere  
[NASA-CASE-MFS-23250-1] c 35 N82-11432

## PHOTOGRAPHIC EQUIPMENT

Apparatus and method for protecting a photographic device Patent  
[NASA-CASE-NPO-10174] c 14 N71-18465  
Method of treating the surface of a glass member  
[NASA-CASE-GSC-12110-1] c 27 N77-32308  
System for forming a quadrified image comprising angularly related fields of view of a three dimensional object  
[NASA-CASE-NPO-14219-1] c 74 N81-17886

## PHOTOGRAPHIC FILM

Film feed camera having a detent means Patent  
[NASA-CASE-LAR-10686] c 14 N71-28935  
Exposure interlock for oscilloscope cameras  
[NASA-CASE-LAR-10319-1] c 14 N73-32322  
Optical noise suppression device and method — laser light exposing film  
[NASA-CASE-MS-C-12640-1] c 74 N76-31998  
Selective image area control of X-ray film exposure density  
[NASA-CASE-NPO-13808-1] c 35 N78-15461  
Method for retarding dye fading during archival storage of developed color photographic film — inert atmosphere  
[NASA-CASE-MFS-23250-1] c 35 N82-11432  
Method and apparatus for making an optical element having a dielectric film  
[NASA-CASE-ARC-11611-1] c 74 N87-28416

## PHOTOGRAPHIC MEASUREMENT

Means and method of measuring viscoelastic strain Patent  
[NASA-CASE-XNP-01153] c 32 N71-17645

Impact measuring technique  
[NASA-CASE-LAR-10913] c 14 N72-16282  
TV fatigue crack monitoring system  
[NASA-CASE-LAR-11490-1] c 39 N78-16387

## PHOTOGRAPHIC PROCESSING

Method and apparatus for producing an image from a transparent object  
[NASA-CASE-GSC-11989-1] c 74 N77-28932  
Method of obtaining intensified image from developed photographic films and plates  
[NASA-CASE-MFS-23461-1] c 35 N79-10389  
Drying apparatus for photographic sheet material  
[NASA-CASE-GSC-11074-1] c 14 N73-28489

## PHOTOGRAPHIC RECORDING

Method of obtaining permanent record of surface flow phenomena Patent  
[NASA-CASE-XLA-01353] c 14 N70-41366  
Focused image holography with extended sources Patent  
[NASA-CASE-ERC-10019] c 16 N71-15551  
Recording and reconstructing focused image holograms Patent  
[NASA-CASE-ERC-10017] c 16 N71-15567  
Method and means for recording and reconstructing holograms without use of a reference beam Patent  
[NASA-CASE-ERC-10020] c 16 N71-26154  
Multiple image storing system for high speed projectile holography  
[NASA-CASE-MFS-20596] c 14 N72-17324  
Phototropic composition of matter  
[NASA-CASE-XGS-03736] c 14 N72-22443  
Method for determining thermo-physical properties of specimens — photographic recording of changes in thin film phase-change temperature indicating material in wind tunnel  
[NASA-CASE-LAR-11053-1] c 25 N74-18551

## PHOTOGRAPHY

System for forming a quadrified image comprising angularly related fields of view of a three dimensional object  
[NASA-CASE-NPO-14219-1] c 74 N81-17886  
Photorefractor ocular screening system  
[NASA-CASE-MFS-26011-1-SB] c 52 N87-24874

## PHOTOIONIZATION

A multichannel photoionization chamber for absorption analysis Patent  
[NASA-CASE-ERC-10044-1] c 14 N71-27090

## PHOTOLYSIS

Solar photolysis of water  
[NASA-CASE-NPO-13675-1] c 44 N77-32580  
Solar photolysis of water  
[NASA-CASE-NPO-14126-1] c 44 N79-11470

## PHOTOMAPPING

Window defect planar mapping technique  
[NASA-CASE-MS-C-19442-1] c 74 N77-10899

## PHOTOMASKS

Method for applying photographic resists to otherwise incompatible substrates  
[NASA-CASE-MS-C-18107-1] c 27 N81-25209

## PHOTOMECHANICAL EFFECT

Photomechanical transducer  
[NASA-CASE-NPO-14363-1] c 39 N81-25400

**PHOTOMETERS**

- Interferometer direction sensor Patent  
[NASA-CASE-NPO-10320] c 14 N71-17655
- Method and device for determining battery state of charge Patent  
[NASA-CASE-NPO-10194] c 03 N71-20407
- Light position locating system Patent  
[NASA-CASE-XNP-01059] c 23 N71-21821
- Fluid flow meter with comparator reference means Patent  
[NASA-CASE-XGS-01331] c 14 N71-22996
- Two color horizon sensor  
[NASA-CASE-ERC-10174] c 14 N72-25409
- Infrared detectors  
[NASA-CASE-LAR-10728-1] c 14 N73-12445
- Chromato-fluorographic drug detector --- device for detecting and recording fluorescent properties of materials  
[NASA-CASE-ARC-10633-1] c 25 N74-26947
- The 2 deg/90 deg laboratory scattering photometer --- particulate refractivity in hydrosols  
[NASA-CASE-GSC-12088-1] c 74 N78-13874
- Magneto-optic detection system with noise cancellation  
[NASA-CASE-NPO-11954-1] c 35 N78-29421
- Alternating gradient photodetector  
[NASA-CASE-NPO-17235-1-CU] c 35 N90-21358

**PHOTOMICROGRAPHY**

- Stereo photomicrography system  
[NASA-CASE-LAR-10176-1] c 14 N72-20380
- Hand-held photomicroscope  
[NASA-CASE-ARC-10468-1] c 14 N73-33361
- Method of examining microcircuit patterns  
[NASA-CASE-NPO-16299-1] c 33 N87-14594

**PHOTOMULTIPLIER TUBES**

- Canopus detector including automotive gain control of photomultiplier tube Patent  
[NASA-CASE-XNP-03914] c 21 N71-10771
- Electronic divider and multiplier using photocells Patent  
[NASA-CASE-XFR-05637] c 09 N71-19480
- Coincidence apparatus for detecting particles  
[NASA-CASE-XLA-07813] c 14 N72-17328
- Method and apparatus for mapping the sensitivity of the face of a photodetector specifically a PMT  
[NASA-CASE-LAR-10320-1] c 09 N72-23172
- Light direction sensor  
[NASA-CASE-NPO-11201] c 14 N72-27409
- Photomultiplier circuit including means for rapidly reducing the sensitivity thereof --- and protection from radiation damage  
[NASA-CASE-ARC-10593-1] c 33 N74-27682

**PHOTON BEAMS**

- Apparatus for photon excited catalysis  
[NASA-CASE-NPO-13566-1] c 25 N77-32255

**PHOTON-ELECTRON INTERACTION**

- Means and method for calibrating a photon detector utilizing electron-photon coincidence  
[NASA-CASE-NPO-15644-1] c 35 N84-33767

**PHOTONS**

- Solar cell collector  
[NASA-CASE-LEW-12552-1] c 44 N78-25527
- Means and method for calibrating a photon detector utilizing electron-photon coincidence  
[NASA-CASE-NPO-15644-1] c 35 N84-33767
- Double photon excitation of high-Rydberg atoms as a long-lived submillimeter detector  
[NASA-CASE-NPO-16372-1] c 72 N86-33127

**PHOTOSENSITIVITY**

- Photosensitive device to detect bearing deviation Patent  
[NASA-CASE-XNP-00438] c 21 N70-35089
- Solar optical telescope dome control system Patent  
[NASA-CASE-MS-C-10966] c 14 N71-19568
- Method and apparatus for mapping the sensitivity of the face of a photodetector specifically a PMT  
[NASA-CASE-LAR-10320-1] c 09 N72-23172
- Holography utilizing surface plasmon resonances  
[NASA-CASE-MFS-22040-1] c 35 N74-26946
- Apparatus for calibrating an image dissector tube  
[NASA-CASE-MFS-22208-1] c 33 N75-26244
- Photoelectrochemical cells including chalcogenophosphate photoelectrodes  
[NASA-CASE-LAR-12958-1] c 44 N84-23019
- Liquid crystal light valve structures  
[NASA-CASE-MS-C-20036-1] c 76 N85-33826
- Dynamic range compression/expansion of light beams by photorefractive crystals  
[NASA-CASE-NPO-17140-1-CU] c 74 N89-14077

**PHOTOTHERMAL CONVERSION**

- Predictive aging of polymers  
[NASA-CASE-NPO-17524-1-CU] c 27 N90-10261

**PHOTOTRANSISTORS**

- Phototransistor imaging system  
[NASA-CASE-MFS-20809] c 23 N73-13660

- Phototransistor  
[NASA-CASE-MFS-20407] c 09 N73-19235
- Distributed proximity sensor system  
[NASA-CASE-NPO-17275-1-CU] c 37 N89-29750

**PHOTOTROPISM**

- Phototropic composition of matter  
[NASA-CASE-XGS-03736] c 14 N72-22443

**PHOTOVISCOELASTICITY**

- Means and method of measuring viscoelastic strain  
Patent  
[NASA-CASE-XNP-01153] c 32 N71-17645

**PHOTOVOLTAIC CELLS**

- Plurality of photosensitive cells on a pyramidal base for planetary trackers  
[NASA-CASE-XNP-04180] c 07 N69-39736
- Light sensitive digital aspect sensor Patent  
[NASA-CASE-XGS-00359] c 14 N70-34158
- Method of using photovoltaic cell using poly-N-vinylcarbazole complex Patent  
[NASA-CASE-NPO-10373] c 03 N71-18698
- Use of thin film light detector  
[NASA-CASE-NPO-11432-2] c 35 N74-15090
- Photovoltaic cell array  
[NASA-CASE-MFS-22458-1] c 44 N77-10635
- Solar cells having integral collector grids  
[NASA-CASE-LEW-12819-1] c 44 N79-11467
- Double-sided solar cell package  
[NASA-CASE-NPO-14199-1] c 44 N79-25482
- Method of construction of a multi-cell solar array  
[NASA-CASE-MFS-23540-1] c 44 N78-26475
- Solar cell with improved N-region contact and method of forming the same  
[NASA-CASE-NPO-14205-1] c 44 N79-31752
- Method of fabricating a photovoltaic module of a substantially transparent construction  
[NASA-CASE-NPO-14303-1] c 44 N80-18550
- Copper doped polycrystalline silicon solar cell  
[NASA-CASE-NPO-14670-1] c 44 N81-19558
- Efficiency of silicon solar cells containing chromium  
[NASA-CASE-NPO-15179-1] c 44 N82-26777
- Method of making a high voltage V-groove solar cell  
[NASA-CASE-LEW-13401-1] c 44 N82-29709
- High voltage planar multijunction solar cell  
[NASA-CASE-LEW-13400-1] c 44 N82-31764
- Heat transparent high intensity high efficiency solar cell  
[NASA-CASE-LEW-12892-1] c 44 N83-14692
- Miniature spectrally selective dosimeter  
[NASA-CASE-LAR-12469-1] c 35 N83-21311
- Cloud cover sensor  
[NASA-CASE-NPO-14936-1] c 47 N83-32232
- Process and apparatus for growing a crystal ribbon  
[NASA-CASE-NPO-15629-1] c 76 N84-35113
- Increased voltage photovoltaic cell  
[NASA-CASE-NPO-16155-1] c 44 N85-30475
- Thermionic photovoltaic energy converter  
[NASA-CASE-LEW-14077-1] c 44 N85-34441
- GaAs Schottky barrier photo-responsive device and method of fabrication  
[NASA-CASE-GSC-12816-1] c 76 N86-20150
- Method of making macrocrystalline or single crystal semiconductor material  
[NASA-CASE-NPO-15904-1] c 76 N86-28760

**PHOTOVOLTAIC CONVERSION**

- Photoelectrochemical cells including chalcogenophosphate photoelectrodes  
[NASA-CASE-LAR-12958-1] c 44 N84-23019

**PHOTOVOLTAIC EFFECT**

- System for improving signal-to-noise ratio of a communication signal Patent Application  
[NASA-CASE-MSC-12259-1] c 07 N70-12616
- Use of thin film light detector  
[NASA-CASE-NPO-11432-2] c 35 N74-15090
- Thermionic photovoltaic energy converter  
[NASA-CASE-LEW-14077-1] c 44 N85-34441

**PHthalATES**

- Stabilized unsaturated polyesters  
[NASA-CASE-NPO-16103-1] c 27 N85-29043

**PHthalOCYANIN**

- Metal phthalocyanine polymers  
[NASA-CASE-ARC-11405-1] c 27 N84-27884
- Phthalocyanine polymers  
[NASA-CASE-ARC-11413-1] c 27 N85-21348
- Metal (2,4,4',4'') phthalocyanine tetraamines as curing agents for epoxy resins  
[NASA-CASE-ARC-11424-1] c 27 N85-34281
- Metal phthalocyanine intermediates for the preparation of polymers  
[NASA-CASE-ARC-11405-2] c 27 N86-19455
- Process for preparing phthalocyanine polymer from imide containing bisphthalonitrile  
[NASA-CASE-ARC-11511-2] c 27 N87-21112

**PHYSICAL EXERCISE**

- Restraint system for ergometer  
[NASA-CASE-MFS-21046-1] c 14 N73-27377

- Tilting table for ergometer and for other biomedical devices  
[NASA-CASE-MFS-21010-1] c 05 N73-30078
- Manual actuator --- for spacecraft exercising machines  
[NASA-CASE-MFS-21481-1] c 37 N74-18127

**PHYSIOLOGICAL EFFECTS**

- Therapeutic hand exerciser  
[NASA-CASE-LAR-11667-1] c 52 N76-19785

**PHYSIOLOGICAL PROPERTIES**

- Polyurethanes of fluorine containing polycarbonates  
[NASA-CASE-MFS-10512] c 06 N73-30099
- System for monitoring physical characteristics of fluids  
[NASA-CASE-NPO-15400-1] c 34 N83-31893

**PHYSIOLOGICAL TESTS**

- Restraint torso for a pressurized suit  
[NASA-CASE-MS-C-12397-1] c 05 N72-25119

**PHYSIOLOGICAL TESTS**

- Vibrophonocardiograph Patent  
[NASA-CASE-XFR-07172] c 05 N71-27234
- Medical subject monitoring systems --- multichannel monitoring systems  
[NASA-CASE-MS-C-14180-1] c 52 N76-14757

**PHYSIOLOGY**

- Phonocardiograph transducer Patent  
[NASA-CASE-XMS-05365] c 14 N71-22993
- Method of detecting and counting bacteria  
[NASA-CASE-GSC-11917-2] c 51 N76-28891

**PIERCING**

- Pressurized cell micrometeoroid detector Patent  
[NASA-CASE-XLA-00936] c 14 N71-14996
- Hypervelocity impact shield  
[NASA-CASE-MS-C-21420-1] c 18 N90-26858

**PIEZOELECTRIC CRYSTALS**

- Miniature stress transducer Patent  
[NASA-CASE-XNP-02983] c 14 N71-21091
- Ultra-stable oscillator with complementary transistors  
[NASA-CASE-GSC-11513-1] c 33 N74-20862
- CDS solid state phase insensitive ultrasonic transducer --- annealing dadium sulfide crystals  
[NASA-CASE-LAR-12304-1] c 35 N80-20559

**PIEZOELECTRIC TRANSDUCERS**

- Force transducer Patent  
[NASA-CASE-XAC-01101] c 14 N70-41957
- Microbalance including crystal oscillators for measuring contaminants in a gas system Patent  
[NASA-CASE-NPO-10144] c 14 N71-17701
- Phonocardiograph transducer Patent  
[NASA-CASE-XMS-05365] c 14 N71-22993
- Semiconductor transducer device  
[NASA-CASE-ERC-10087-2] c 14 N72-31448
- Length mode piezoelectric ultrasonic transducer for inspection of solid objects  
[NASA-CASE-MS-C-19672-1] c 38 N79-14398
- Piezoelectric deicing device  
[NASA-CASE-LEW-13773-2] c 33 N86-20671

**PIEZOELECTRICITY**

- Missile stage separation indicator and stage initiator Patent  
[NASA-CASE-XLA-00791] c 03 N70-39930
- Piezoelectric pump Patent  
[NASA-CASE-XNP-05429] c 26 N71-21824
- Pressure sensitive transducers Patent  
[NASA-CASE-ERC-10087] c 14 N71-27334
- Piezoelectric composite materials  
[NASA-CASE-LEW-12582-1] c 76 N83-34796

**PIEZORESISTIVE TRANSDUCERS**

- Miniature stress transducer Patent  
[NASA-CASE-XNP-02983] c 14 N71-21091
- Transverse piezoresistance and pinch effect electromechanical transducers Patent  
[NASA-CASE-ERC-10088] c 26 N71-25490

**PIGMENTS**

- Stabilized zinc oxide coating compositions Patent  
[NASA-CASE-XMF-07770-2] c 18 N71-26772

**PILOT TRAINING**

- Controlled visibility device for an aircraft Patent  
[NASA-CASE-XFR-04147] c 11 N71-10748
- Kinesthetic control simulator --- for pilot training  
[NASA-CASE-LAR-10276-1] c 09 N75-15662

**PILOTS (PERSONNEL)**

- System for indicating direction of intruder aircraft  
[NASA-CASE-ERC-10226-1] c 14 N73-16483

**PINCH EFFECT**

- Toggle mechanism for pinching metal tubes  
[NASA-CASE-GSC-12274-1] c 37 N79-28550

**PINHOLE CAMERAS**

- Three-dimensional and tomographic imaging device for X-ray and gamma-ray emitting objects  
[NASA-CASE-GSC-12851-1] c 35 N85-30281

**PINS**

- Fatigue-resistant shear pin  
[NASA-CASE-XLA-09122] c 15 N69-27505
- Turbo-machine blade vibration damper Patent  
[NASA-CASE-XLE-00155] c 28 N71-29154
- Safety-type locking pin  
[NASA-CASE-MFS-18495] c 15 N72-11385

Self-locking double retention redundant full pin release  
[NASA-CASE-NPO-16233-1] c 37 N86-20801

**PINTLES**  
Metal valve pintle with encapsulated elastomeric body  
Patent  
[NASA-CASE-MS-C-12116-1] c 15 N71-17648

**PIPE FLOW**  
Flat-plate heat pipe  
[NASA-CASE-GSC-11998-1] c 34 N77-32413  
Monogroove heat pipe design: Insulated liquid channel  
with bridging wick  
[NASA-CASE-MS-C-20497-1] c 34 N85-29180  
Energy efficient continuous flow ash lockhopper  
[NASA-CASE-NPO-16985-1-CU] c 31 N88-24814

**PIPELINES**  
Spherical shield Patent  
[NASA-CASE-XNP-01855] c 15 N71-28937

**PIPELINING (COMPUTERS)**  
Pipelined digital SAR azimuth correlator using hybrid  
FFT-transversal filter  
[NASA-CASE-NPO-15519-1] c 32 N84-34651  
Neighborhood comparison operator  
[NASA-CASE-NPO-16464-1CU] c 60 N86-24224  
Real time pipelined system for forming the sum of  
products in the processing of video data  
[NASA-CASE-NPO-16462-1-CU] c 60 N88-24169  
Programmable pipelined image processor  
[NASA-CASE-NPO-16461-1CU] c 60 N89-26400

**PIPES (TUBES)**  
Device for determining the accuracy of the flare on a  
flared tube  
[NASA-CASE-XKS-03495] c 14 N69-39785  
Piping arrangement through a double chamber  
structure  
[NASA-CASE-XNP-08882] c 15 N69-39935  
Foldable conduit Patent  
[NASA-CASE-XLE-00620] c 32 N70-41579  
Thermobulb mount Patent  
[NASA-CASE-NPO-10158] c 33 N71-16356  
Method and apparatus for precision sizing and joining  
of large diameter tubes Patent  
[NASA-CASE-XMF-05114] c 15 N71-17650  
Sealed separable connection Patent  
[NASA-CASE-NPO-10064] c 15 N71-17693  
Electrical switching device Patent  
[NASA-CASE-NPO-10037] c 09 N71-19610  
Tube dimpling tool Patent  
[NASA-CASE-XMS-06876] c 15 N71-21536  
Plasma device feed system Patent  
[NASA-CASE-XLE-02802] c 25 N71-21694  
Spin forming tubular elbows Patent  
[NASA-CASE-XMF-01083] c 15 N71-22723  
Portable milling tool Patent  
[NASA-CASE-XMF-03511] c 15 N71-22799  
Internal flare angle gauge Patent  
[NASA-CASE-XMF-04415] c 14 N71-24693  
Method and apparatus for precision sizing and joining  
of large diameter tubes Patent  
[NASA-CASE-XMF-05114-3] c 15 N71-24865  
Weld preparation machine Patent  
[NASA-CASE-XKS-07953] c 15 N71-26134  
Method and apparatus for precision sizing and joining  
of large diameter tubes Patent  
[NASA-CASE-XMF-05114-2] c 15 N71-26148  
Collapsible antenna boom and transmission line  
Patent  
[NASA-CASE-MFS-20068] c 07 N71-27191  
Tube fabricating process  
[NASA-CASE-LAR-10203-1] c 15 N72-16330  
Torsional disconnect unit  
[NASA-CASE-NPO-10704] c 15 N72-20445  
Open type urine receptacle  
[NASA-CASE-MS-C-12324-1] c 05 N72-22093  
Method for measuring cutaneous sensory perception  
[NASA-CASE-MS-C-13609-1] c 05 N72-25122  
Low mass truss structure  
[NASA-CASE-LAR-10546-1] c 11 N72-25287  
Honeycomb panels formed of minimal surface periodic  
tubule layers  
[NASA-CASE-ERC-10364] c 18 N72-25540  
Honeycomb core structures of minimal surface tubule  
sections  
[NASA-CASE-ERC-10363] c 18 N72-25541  
Method for distillation of liquids  
[NASA-CASE-XNP-08124-2] c 06 N73-13129  
Cable restraint  
[NASA-CASE-LAR-10129-1] c 15 N73-25512  
Method of fabricating a twisted composite  
superconductor  
[NASA-CASE-LEW-11015] c 26 N73-32571  
Open tube guideway for high speed air cushioned  
vehicles  
[NASA-CASE-LAR-10256-1] c 85 N74-34672  
Method for fabricating a mass spectrometer inlet leak  
[NASA-CASE-GSC-12077-1] c 35 N77-24455

Precision heat forming of tetrafluoroethylene tubing  
[NASA-CASE-MS-C-18430-1] c 37 N82-24491

Open ended tubing cutters  
[NASA-CASE-MS-C-18538-1] c 37 N82-26672

Method of making an ion beam sputter-etched  
ventricular catheter for hydrocephalus shunt  
[NASA-CASE-LEW-13107-2] c 52 N84-23095

Tubing and cable cutting tool  
[NASA-CASE-LAR-12786-1] c 37 N84-28085

Fluid leak indicator  
[NASA-CASE-MS-C-20783-1] c 35 N86-20756

Method of repairing hidden leaks in tubes  
[NASA-CASE-MFS-19796-1] c 37 N86-32736

Self-contained, single-use hose and tubing cleaning  
module  
[NASA-CASE-MS-C-20857-1] c 37 N87-17035

Seamless metal-clad fiber-reinforced organic matrix  
composite structures and process for their manufacture  
[NASA-CASE-LAR-13562-1] c 24 N87-18613

Liquid seeding atomizer  
[NASA-CASE-ARC-11631-1] c 34 N87-21255

Tube coupling device  
[NASA-CASE-MFS-25964-2] c 37 N87-22977

Tapered, tubular polyester fabric  
[NASA-CASE-MS-C-21082-1] c 27 N87-29672

Tool and process for miniature explosive joining of  
tubes  
[NASA-CASE-LAR-13662-1] c 37 N88-14359

**PISTON ENGINES**  
Stirling cycle engine and refrigeration systems  
[NASA-CASE-NPO-13613-1] c 37 N76-29590  
Hot gas engine with dual crankshafts  
[NASA-CASE-NPO-14221-1] c 37 N81-25370  
Solar engine  
[NASA-CASE-LAR-12148-1] c 44 N82-24640  
Stirling cycle cryogenic cooler  
[US-PATENT-4,389,849] c 44 N83-28574

**PISTONS**  
Automatic pump Patent  
[NASA-CASE-XNP-04731] c 15 N71-24042  
Firefly pump-metering system  
[NASA-CASE-GSC-10218-1] c 15 N72-21465  
Collapsible pistons  
[NASA-CASE-MS-C-13789-1] c 11 N73-32152  
Airflow control system for supersonic inlets  
[NASA-CASE-LEW-11188-1] c 02 N74-20646  
Free-piston regenerative hot gas hydraulic engine  
[NASA-CASE-LEW-12274-1] c 37 N80-31790  
Power control for hot gas engines  
[NASA-CASE-NPO-14220-1] c 37 N81-14318  
Multiple plate hydrostatic viscous damper  
[NASA-CASE-LEW-12445-1] c 37 N81-22360  
Gas-to-hydraulic power converter  
[NASA-CASE-MS-C-18794-1] c 44 N83-14693  
Centrifugal-reciprocating compressor  
[NASA-CASE-NPO-14597-2] c 37 N84-28081  
Lightweight piston  
[NASA-CASE-LAR-13150-1] c 24 N87-27742  
Composite piston  
[NASA-CASE-LAR-13435-1] c 37 N88-23981  
Lightweight piston architecture  
[NASA-CASE-LAR-13926-1] c 37 N80-22042

**PITCH (INCLINATION)**  
Reverse pitch fan with divided splitter  
[NASA-CASE-LEW-12760-1] c 07 N77-17059  
Velocity vector control system augmented with direct  
lift control  
[NASA-CASE-LAR-12268-1] c 08 N81-24106  
Pitch attitude stabilization system utilizing engine  
pressure ratio feedback signals  
[NASA-CASE-LAR-12562-1] c 08 N81-26152  
Swashplate control system  
[NASA-CASE-ARC-11633-1] c 08 N87-23631

**PITCHING MOMENTS**  
High lift, low pitching moment airfoils  
[NASA-CASE-LAR-13215-1] c 02 N89-14224

**PIVOTS**  
Tension measurement device Patent  
[NASA-CASE-XMS-04545] c 15 N71-22878  
Unidirectional flexural pivot  
[NASA-CASE-GSC-12622-1] c 37 N84-12492  
Joint for deployable structures  
[NASA-CASE-NPO-16038-1] c 37 N86-19605  
Thumb-actuated two-axis controller  
[NASA-CASE-ARC-11372-1] c 08 N86-27288

**PLANAR STRUCTURES**  
Window defect planar mapping technique  
[NASA-CASE-MS-C-19442-1] c 74 N77-10899  
Method and apparatus for preparing multiconductor  
cable with flat conductors  
[NASA-CASE-MFS-10946-1] c 31 N79-21226  
High voltage planar multijunction solar cell  
[NASA-CASE-LEW-13400-1] c 44 N82-31764  
Dual cathode system for electron beam instruments  
[NASA-CASE-NPO-16878-1-CU] c 35 N90-20351

Planar microstrip Yagi array antenna  
[NASA-CASE-NPO-17873-1-CU] c 32 N90-27015

**PLANE WAVES**  
Multiple reflection conical microwave antenna  
[NASA-CASE-NPO-11661] c 07 N73-14130

**PLANETARY ATMOSPHERES**  
Method of planetary atmospheric investigation using a  
split-trajectory dual flyby mode Patent  
[NASA-CASE-XAC-08494] c 30 N71-15990  
Flow field simulation Patent  
[NASA-CASE-LAR-11138] c 12 N71-20436  
Ablation sensor Patent  
[NASA-CASE-XLA-01791] c 14 N71-22991

**PLANETARY GRAVITATION**  
Impact simulator Patent  
[NASA-CASE-XLA-00493] c 11 N70-34786  
Means for visually indicating flight paths of vehicles  
between the Earth, Venus, and Mercury Patent  
[NASA-CASE-XNP-00708] c 14 N70-35394

**PLANETARY LANDING**  
Parachute glider Patent  
[NASA-CASE-XLA-00898] c 02 N70-36804  
Omnidirectional multiple impact landing system Patent  
[NASA-CASE-XLA-09881] c 31 N71-16085

**PLANETARY ORBITS**  
Flexible foam erectable space structures Patent  
[NASA-CASE-XLA-00686] c 31 N70-34135  
Erectable modular space station Patent  
[NASA-CASE-XLA-00678] c 31 N70-34296

**PLANETARY RADIATION**  
Attitude sensor for space vehicles Patent  
[NASA-CASE-XLA-00793] c 21 N71-22880

**PLANETARY SURFACES**  
Method and apparatus for mapping planets  
[NASA-CASE-NPO-11001] c 07 N72-21118

**PLANTS (BOTANY)**  
Rotary plant growth accelerating apparatus —  
weightlessness  
[NASA-CASE-ARC-10722-1] c 51 N75-25503  
Molten salt pyrolysis of latex — synthetic hydrocarbon  
fuel production using the Guayule shrub  
[NASA-CASE-NPO-14315-1] c 27 N81-17261  
Enhancement of in vitro guayule propagation  
[NASA-CASE-NPO-15213-1] c 51 N83-17045

**PLASMA ACCELERATION**  
Apparatus for increasing ion engine beam density  
Patent  
[NASA-CASE-XLE-00519] c 28 N70-41576  
Coaxial high density, hypervelocity plasma generator and  
accelerator with ionizable metal disc  
[NASA-CASE-MFS-20589] c 25 N72-32688

**PLASMA ACCELERATORS**  
Plasma accelerator Patent  
[NASA-CASE-XLA-00675] c 25 N70-33267  
Continuously operating induction plasma accelerator  
Patent  
[NASA-CASE-XLA-01354] c 25 N70-36946  
Crossed-field MHD plasma generator/ accelerator  
Patent  
[NASA-CASE-XLA-03374] c 25 N71-15562  
Self-repeating plasma generator having communicating  
annular and linear arc discharge passages Patent  
[NASA-CASE-XLA-03103] c 25 N71-21693  
Magnetically controlled plasma accelerator Patent  
[NASA-CASE-XLA-00327] c 25 N71-29184  
Two stage light gas-plasma projectile accelerator  
[NASA-CASE-MFS-22287-1] c 75 N76-14931

**PLASMA ARC WELDING**  
ARC length control for plasma welding  
[NASA-CASE-MS-C-20900-1] c 37 N88-30131

**PLASMA CONTROL**  
Superconductive magnetic-field-trapping device  
[NASA-CASE-XNP-01185] c 26 N73-28710  
Self-energized plasma compressor — for compressing  
plasma discharged from coaxial plasma generator  
[NASA-CASE-MFS-22145-1] c 75 N75-13625

**PLASMA CYLINDERS**  
Plasma fluidic hybrid display Patent  
[NASA-CASE-ERC-10100] c 09 N71-33519

**PLASMA DENSITY**  
Focussing system for an ion source having apertured  
electrodes Patent  
[NASA-CASE-XNP-03332] c 09 N71-10618  
Measurement of plasma temperature and density using  
radiation absorption  
[NASA-CASE-ARC-10598-1] c 75 N74-30156  
Hollow cathode apparatus  
[NASA-CASE-NPO-15560-1] c 33 N85-21491

**PLASMA DIAGNOSTICS**  
Probes having ring and primary sensor at same potential  
to prevent collection of stray wall currents in ionized  
gases  
[NASA-CASE-XLE-00690] c 25 N69-39884



- Apparatus for measuring conductivity and velocity of plasma utilizing a plurality of sensing coils positioned in the plasma Patent  
[NASA-CASE-XAC-05695] c 25 N71-16073
- Measurement of plasma temperature and density using radiation absorption  
[NASA-CASE-ARC-10598-1] c 75 N74-30156
- Trochoidal analysis of scattered electrons in a merged electron-ion beam geometry  
[NASA-CASE-NPO-16789-1-CU] c 72 N89-29169
- PLASMA DYNAMICS**
- Apparatus for measuring conductivity and velocity of plasma utilizing a plurality of sensing coils positioned in the plasma Patent  
[NASA-CASE-XAC-05695] c 25 N71-16073
- Self-energized plasma compressor — for compressing plasma discharged from coaxial plasma generator  
[NASA-CASE-MFS-22145-1] c 75 N75-13625
- PLASMA ENGINES**
- Plasma device feed system Patent  
[NASA-CASE-XLE-02902] c 25 N71-21694
- Hybrid plume plasma rocket  
[NASA-CASE-MSC-20476-2] c 20 N89-25279
- PLASMA GENERATORS**
- Method and apparatus for producing a plasma Patent  
[NASA-CASE-XLA-00147] c 25 N70-34661
- Crossed-field MHD plasma generator/ accelerator Patent  
[NASA-CASE-XLA-03374] c 25 N71-15562
- Coaxial high density, hypervelocity plasma generator and accelerator with ionizable metal disc  
[NASA-CASE-MFS-20589] c 25 N72-32688
- Self-energized plasma compressor — for compressing plasma discharged from coaxial plasma generator  
[NASA-CASE-MFS-22145-1] c 75 N75-13625
- Self-energized plasma compressor  
[NASA-CASE-MFS-22145-2] c 75 N76-17851
- Continuous plasma laser — method and apparatus for producing intense, coherent, monochromatic light from low temperature plasma  
[NASA-CASE-XNP-04167-3] c 36 N77-19416
- PLASMA GUNS**
- Method of making a diffusion bonded refractory coating Patent  
[NASA-CASE-XLE-01604-2] c 15 N71-15610
- Plasma gun with coaxial powder feed and adjustable cathode  
[NASA-CASE-LEW-14901-1] c 75 N90-10718
- PLASMA JETS**
- Method of preparing water purification membranes — polymerization of allyl amine as thin films in plasma discharge  
[NASA-CASE-ARC-10643-1] c 25 N75-12087
- Combination automatic-starting electrical plasma torch and gas shutoff valve — for satellite attitude control  
[NASA-CASE-XLE-10717] c 37 N75-29426
- Plasma cleaning device — designed for high vacuum environments  
[NASA-CASE-MFS-22906-1] c 75 N78-27913
- PLASMA LAYERS**
- Electrostatic plasma modulator for space vehicle re-entry communication Patent  
[NASA-CASE-XLA-01400] c 07 N70-41331
- Means for communicating through a layer of ionized gases Patent  
[NASA-CASE-XLA-01127] c 07 N70-41372
- Reentry communication by material addition Patent  
[NASA-CASE-XLA-01552] c 07 N71-11284
- PLASMA POTENTIALS**
- Method and apparatus for neutralizing potentials induced on spacecraft surfaces  
[NASA-CASE-GSC-11963-1] c 33 N77-10429
- PLASMA PROBES**
- Probes having ring and primary sensor at same potential to prevent collection of stray wall currents in ionized gases  
[NASA-CASE-XLE-00690] c 25 N69-39884
- Small plasma probe Patent  
[NASA-CASE-XLE-02578] c 25 N71-20747
- PLASMA PROPULSION**
- Method of making dished ion thruster grids  
[NASA-CASE-LEW-11694-1] c 20 N75-18310
- Ring-cusp ion thruster with shell anode  
[NASA-CASE-LEW-13881-1] c 20 N85-21256
- Hybrid plume plasma rocket  
[NASA-CASE-MSC-20476-2] c 20 N89-25279
- PLASMA RADIATION**
- Means for measuring the electron density gradients of the plasma sheath formed around a space vehicle Patent  
[NASA-CASE-XLA-06232] c 25 N71-20563
- Continuous plasma light source  
[NASA-CASE-XNP-04167-2] c 25 N72-24753
- PLASMA SHEATHS**
- Apparatus for measuring electric field strength on the surface of a model vehicle Patent  
[NASA-CASE-XLE-02038] c 09 N71-16086
- Means for measuring the electron density gradients of the plasma sheath formed around a space vehicle Patent  
[NASA-CASE-XLA-06232] c 25 N71-20563
- PLASMA SPRAYING**
- Method of coating carbonaceous base to prevent oxidation destruction and coated base Patent  
[NASA-CASE-XLA-00302] c 15 N71-16077
- Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-13268-2] c 37 N82-26674
- Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-13268-1] c 27 N82-29453
- Thermal barrier coating system  
[NASA-CASE-LEW-14057-1] c 24 N85-35233
- Plasma gun with coaxial powder feed and adjustable cathode  
[NASA-CASE-LEW-14901-1] c 75 N90-10718
- Improved process for HIP canning of composites  
[NASA-CASE-LEW-14990-1-CU] c 24 N90-15147
- PLASMA TEMPERATURE**
- Measurement of plasma temperature and density using radiation absorption  
[NASA-CASE-ARC-10598-1] c 75 N74-30156
- PLASMA-ELECTROMAGNETIC INTERACTION**
- Plasma igniter for internal combustion engine  
[NASA-CASE-NPO-13828-1] c 37 N79-11405
- PLASMAS (PHYSICS)**
- Apparatus for measuring conductivity and velocity of plasma utilizing a plurality of sensing coils positioned in the plasma Patent  
[NASA-CASE-XAC-05695] c 25 N71-16073
- Hollow cathode apparatus  
[NASA-CASE-NPO-15560-1] c 33 N85-21491
- Method and apparatus for maintaining thermal control in plasma conditions  
[NASA-CASE-MFS-28368-1] c 75 N90-10717
- PLASMONS**
- Inelastic tunnel diodes  
[NASA-CASE-LEW-13833-1] c 33 N85-21492
- Solar energy converter using surface plasma waves  
[NASA-CASE-LEW-13827-1] c 44 N85-21768
- PLASTIC COATINGS**
- Coating process  
[NASA-CASE-XNP-06508] c 18 N69-39895
- Apparatus and method for skin packaging articles  
[NASA-CASE-MFS-20855] c 15 N73-27405
- Silicon nitride coated, plastic covered solar cell  
[NASA-CASE-LEW-11496-1] c 44 N77-14580
- Oxygen post-treatment of plastic surface coated with plasma polymerized silicon-containing monomers  
[NASA-CASE-ARC-10915-2] c 27 N79-18052
- Advanced inorganic separators for alkaline batteries  
[NASA-CASE-LEW-13171-1] c 44 N82-29708
- Process for preparing highly optically transparent/colorless aromatic polyimide film  
[NASA-CASE-LAR-13351-1] c 27 N86-31727
- PLASTIC DEFORMATION**
- Light intensity strain analysis  
[NASA-CASE-LAR-10765-1] c 32 N73-20740
- Mechanical bonding of metal method  
[NASA-CASE-LEW-12941-1] c 26 N83-10170
- PLASTIC TAPES**
- Thermocouple tape  
[NASA-CASE-LEW-11072-1] c 14 N73-24472
- PLASTICIZERS**
- Inorganic-organic separators for alkaline batteries  
[NASA-CASE-LEW-12649-1] c 44 N78-25530
- Tackifier for addition polyimides containing monoethylphthalate  
[NASA-CASE-LAR-12642-1] c 27 N81-29229
- Method of bonding plasticized elastomer to metal and articles produced thereby  
[NASA-CASE-MFS-25181-1] c 27 N82-24340
- Advanced inorganic separators for alkaline batteries  
[NASA-CASE-LEW-13171-1] c 44 N82-29708
- PLASTICS**
- Method for forming plastic materials Patent  
[NASA-CASE-XMS-05516] c 15 N71-17803
- Method of making inflatable honeycomb Patent  
[NASA-CASE-XLA-03492] c 15 N71-22713
- Sealing member and combination thereof and method of producing said sealing member Patent  
[NASA-CASE-XMS-01625] c 15 N71-23022
- Dielectric molding apparatus Patent  
[NASA-CASE-LAR-10121-1] c 15 N71-26721
- Radar calibration sphere  
[NASA-CASE-XLA-11154] c 07 N72-21117
- Molding apparatus — for thermosetting plastic compositions  
[NASA-CASE-LAR-10489-2] c 31 N74-32920
- Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-2] c 27 N78-32315
- PLATENS**
- Compression test apparatus  
[NASA-CASE-MSC-18723-1] c 35 N83-21312
- PLATES**
- Fully articulated four-point-bend loading fixture  
[NASA-CASE-LEW-14776-1] c 37 N90-15445
- Pressurized bellows flat contact heat exchanger interface  
[NASA-CASE-MSC-21271-1] c 34 N90-21999
- PLATES (STRUCTURAL MEMBERS)**
- Foil seal  
[NASA-CASE-XLE-05130] c 15 N69-21362
- Fifth wheel  
[NASA-CASE-FRC-10081-1] c 37 N77-14477
- Microwave dichroic plate  
[NASA-CASE-GSC-12171-1] c 33 N79-28416
- Floating nut retention system  
[NASA-CASE-MSC-16938-1] c 37 N80-23653
- Optimized bolted joint  
[NASA-CASE-LAR-13250-1] c 37 N86-27630
- Method and apparatus for making an optical element having a dielectric film  
[NASA-CASE-ARC-11611-1] c 74 N87-28416
- PLATFORMS**
- Expandable pallet for space station interface attachments  
[NASA-CASE-MSC-21117-2] c 18 N89-28554
- PLATING**
- Selective plating of etched circuits without removing previous plating Patent  
[NASA-CASE-XGS-03120] c 15 N71-24047
- Peen plating  
[NASA-CASE-GSC-11163-1] c 15 N73-32360
- Scanning nozzle plating system — for etching or plating metals on substrates without masking  
[NASA-CASE-NPO-11758-1] c 31 N74-23065
- Method for depositing an oxide coating  
[NASA-CASE-LEW-13131-1] c 44 N83-10494
- PLATINUM**
- Electrolytic cell structure  
[NASA-CASE-LAR-11042-1] c 33 N75-27252
- Platinum resistance thermometer circuit  
[NASA-CASE-MSC-12327-1] c 35 N77-27368
- PLATINUM ALLOYS**
- Joining lead wires to thin platinum alloy films  
[NASA-CASE-LEW-13934-1] c 35 N83-35338
- PLAYBACKS**
- Method of and means for testing a tape record/playback system  
[NASA-CASE-MFS-22671-2] c 35 N77-17426
- Thermomagnetic recording and magnetic-optic playback system  
[NASA-CASE-NPO-10872-1] c 35 N79-16246
- PLENUM CHAMBERS**
- Air cushion lift pad Patent  
[NASA-CASE-MFS-14685] c 31 N71-15689
- Gas filter mounting structure  
[NASA-CASE-MSC-12297] c 14 N72-23457
- Micro-fluid exchange coupling apparatus  
[NASA-CASE-ARC-11114-1] c 51 N81-14605
- Sonic levitation apparatus  
[NASA-CASE-MFS-25828-1] c 71 N84-28568
- PLETHYSMOGRAPHY**
- Readout electrode assembly for measuring biological impedance  
[NASA-CASE-ARC-10816-1] c 35 N76-24525
- Apparatus for determining changes in limb volume  
[NASA-CASE-MSC-18759-1] c 52 N83-27578
- PLOTTERS**
- Automated equipotential plotter  
[NASA-CASE-NPO-11134] c 09 N72-21246
- Apparatus and method for determining the position of a radiant energy source  
[NASA-CASE-GSC-12147-1] c 32 N81-27341
- PLOTTING**
- Instrument for measuring potentials on two dimensional electric field plots Patent  
[NASA-CASE-XLA-08493] c 10 N71-19421
- PLUG NOZZLES**
- Cascade plug nozzle — for jet noise reduction  
[NASA-CASE-LAR-11674-1] c 07 N76-18117
- Apparatus and method for jet noise suppression  
[NASA-CASE-LAR-11903-2] c 71 N84-14873
- PLUGS**
- Rocket chamber leak test fixture  
[NASA-CASE-XFR-09479] c 14 N69-27503
- Fatigue-resistant shear pin  
[NASA-CASE-XLA-09122] c 15 N69-27505
- Gas regulator Patent  
[NASA-CASE-NPO-10298] c 12 N71-17661
- Heated porous plug microthruster  
[NASA-CASE-GSC-10640-1] c 28 N72-18766

High temperature penetrator assembly with bayonet plug and ramp-activated lock  
[NASA-CASE-MSC-18526-1] c 37 N82-24494  
Rotor self-lubricating axial stop  
[NASA-CASE-MFS-28273-1] c 37 N88-23974  
Porous plug for reducing orifice induced pressure error in airfoils

[NASA-CASE-LAR-13569-1] c 35 N89-12841

**PLUMES**

Hypervelocity impact shield  
[NASA-CASE-MSC-21420-1] c 18 N90-26858

**PNEUMATIC CONTROL**

Pneumatic system for controlling and actuating pneumatic cyclic devices

[NASA-CASE-XMS-04843] c 03 N69-21469

Pneumatic mirror support system  
[NASA-CASE-XLA-03271] c 11 N69-24321

Valve actuator Patent  
[NASA-CASE-XHQ-01208] c 15 N70-35409

Quick release hook tape Patent  
[NASA-CASE-XMS-10660-1] c 15 N71-25975

Foot pedal operated fluid type exercising device  
[NASA-CASE-MSC-11561-1] c 05 N73-32014

Pneumatic load compensating or controlling system  
[NASA-CASE-ARC-10907-1] c 37 N75-32465

**PNEUMATIC EQUIPMENT**

High pressure air valve Patent  
[NASA-CASE-MSC-11010] c 15 N71-19485

Inflatable support structure Patent  
[NASA-CASE-XLA-01731] c 32 N71-21045

Apparatus for purging systems handling toxic, corrosive, noxious and other fluids Patent  
[NASA-CASE-XMS-01805] c 12 N71-21089

Zero gravity apparatus Patent  
[NASA-CASE-XMF-06515] c 14 N71-23227

Pneumatic amplifier Patent  
[NASA-CASE-MSC-12121-1] c 15 N71-27147

Life raft stabilizer  
[NASA-CASE-MSC-12393-1] c 02 N73-26006

Airlock  
[NASA-CASE-MFS-20922-1] c 18 N74-22136

Pneumatic load compensating or controlling system  
[NASA-CASE-ARC-10907-1] c 37 N75-32465

Gas-to-hydraulic power converter  
[NASA-CASE-MSC-18794-1] c 44 N83-14693

System and method for moving a probe to follow movements of tissue  
[NASA-CASE-NPO-15197-1] c 52 N83-25346

Apparatus for improving the fuel efficiency of a gas turbine engine  
[NASA-CASE-LEW-13142-1] c 07 N83-36029

Inflatable device for installing strain gage bridges  
[NASA-CASE-FRC-11068-1] c 35 N84-12443

Method for improving the fuel efficiency of a gas turbine engine  
[NASA-CASE-LEW-13142-2] c 07 N86-20389

Space probe/satellite ejection apparatus for spacecraft  
[NASA-CASE-MFS-25429-1] c 18 N86-20469

**POINT SOURCES**

Electronic background suppression method and apparatus for a field scanning sensor  
[NASA-CASE-XGS-05211] c 07 N69-39980

X-ray reflection collimator adapted to focus X-radiation directly on a detector Patent  
[NASA-CASE-XHQ-04106] c 14 N70-40240

Apparatus and method for determining the position of a radiant energy source  
[NASA-CASE-GSC-12147-1] c 32 N81-27341

**POINTING CONTROL SYSTEMS**

Rotable accurate reflector system for telescopes Patent  
[NASA-CASE-NPO-10468] c 23 N71-33229

All sky pointing attitude control system  
[NASA-CASE-ARC-10716-1] c 35 N77-20399

Magnetic suspension and pointing system  
[NASA-CASE-LAR-11889-2] c 37 N78-27424

Magnetic suspension and pointing system — on a carrier vehicle  
[NASA-CASE-LAR-11889-1] c 35 N79-26372

Solar tracking system  
[NASA-CASE-MFS-23999-1] c 44 N81-24520

Balanced bridge feedback control system  
[NASA-CASE-NPO-17430-1-CU] c 33 N90-21951

**POINTS (MATHEMATICS)**

Method of and apparatus for generating an interstitial point in a data stream having an even number of data points  
[NASA-CASE-MFS-25319-1] c 60 N85-33701

**POLAR ORBITS**

Cartwheel satellite synchronization system Patent  
[NASA-CASE-XGS-05579] c 31 N71-15676

**POLARIMETERS**

Polarimeter for transient measurement Patent  
[NASA-CASE-XNP-08883] c 23 N71-16101

Interferometer-polarimeter  
[NASA-CASE-NPO-11239] c 14 N73-12446

**POLARIMETRY**

Data volume reduction for imaging radar polarimetry  
[NASA-CASE-NPO-17184-1-CU] c 32 N88-26541

**POLARITY**

Positive dc to negative dc converter Patent  
[NASA-CASE-XMF-08217] c 03 N71-23239

Peak polarity selector Patent  
[NASA-CASE-FRC-10010] c 10 N71-24862

Precision rectifier with FET switching means Patent  
[NASA-CASE-ARC-10101-1] c 09 N71-33109

**POLARIZATION (WAVES)**

System for interference signal nulling by polarization adjustment  
[NASA-CASE-NPO-13140-1] c 32 N75-24982

Multifrequency broadband polarized horn antenna  
[NASA-CASE-NPO-14588-1] c 32 N81-25278

Faraday rotation measurement method and apparatus  
[NASA-CASE-NPO-14839-1] c 35 N82-15381

**POLARIZED ELECTROMAGNETIC RADIATION**

Antenna beam-shaping apparatus Patent  
[NASA-CASE-XNP-00611] c 09 N70-35219

Parabolic reflector horn feed with spillover correction Patent  
[NASA-CASE-XNP-00540] c 09 N70-35382

Antenna feed system for receiving circular polarization and transmitting linear polarization  
[NASA-CASE-NPO-14362-1] c 32 N80-16261

Coaxial phased array antenna  
[NASA-CASE-MSC-16800-1] c 32 N81-14187

Reciprocating linear motor  
[NASA-CASE-GSC-12773-2] c 33 N87-23904

**POLARIZED LIGHT**

Polarization compensator for optical communications  
[NASA-CASE-GSC-11782-1] c 74 N76-30053

Visible and infrared polarization ratio spectrophotometer  
[NASA-CASE-LAR-12285-1] c 35 N80-28687

**POLARIZED RADIATION**

Microwave limb sounder — measuring trace gases in the upper atmosphere  
[NASA-CASE-NPO-14544-1] c 46 N82-12685

**POLARIZERS**

Partial polarizer filter  
[NASA-CASE-GSC-12225-1] c 74 N79-14891

Wind dynamic range video camera  
[NASA-CASE-MFS-25750-1] c 32 N88-20647

**POLES**

Radial and torsionally controlled magnetic bearing  
[NASA-CASE-GSC-12957-1] c 37 N87-17038

**POLISHING**

Conforming polisher for aspheric surface of revolution Patent  
[NASA-CASE-XGS-02884] c 15 N71-22705

Method of forming a sharp edge on an optical device  
[NASA-CASE-GSC-12348-1] c 74 N80-24149

**POLLUTION CONTROL**

System for minimizing internal combustion engine pollution emission  
[NASA-CASE-NPO-13402-1] c 37 N76-18457

Combustion engine — for air pollution control  
[NASA-CASE-NPO-13671-1] c 37 N77-31497

Supercritical fuel injection system  
[NASA-CASE-LEW-12890-1] c 07 N81-29129

Apparatus and method for destructive removal of particles contained in flowing fluid  
[NASA-CASE-NPO-15426-1] c 35 N84-17555

**POLLUTION MONITORING**

Fluorescence detector for monitoring atmospheric pollutants  
[NASA-CASE-NPO-13231-1] c 45 N75-27585

Stack plume visualization system  
[NASA-CASE-LAR-11675-1] c 45 N76-17658

Indicator providing continuous indication of the presence of a specific pollutant in air  
[NASA-CASE-NPO-13474-1] c 45 N78-21742

Method for detecting pollutants — through chemical reactions and heat treatment  
[NASA-CASE-LAR-11405-1] c 45 N78-31714

Automated syringe sampler — remote sampling of air and water  
[NASA-CASE-LAR-12308-1] c 35 N81-29407

**POLYAMIDE RESINS**

Vitro-violet process for producing flame resistant polyamides and products produced thereby — protective clothing for high oxygen environments  
[NASA-CASE-MSC-16074-1] c 27 N80-26446

Thermoset-thermoplastic aromatic polyamide containing N-propargyl groups  
[NASA-CASE-LAR-12723-2] c 27 N84-22746

Heat resistant protective hand covering  
[NASA-CASE-MSC-20261-1] c 54 N84-28484

Thermoset-thermoplastic aromatic polyamide containing N-propargyl groups  
[NASA-CASE-LAR-12723-1] c 27 N85-20123

Process for preparing highly optically transparent/colorless aromatic polyimide film  
[NASA-CASE-LAR-13351-1] c 27 N86-31727

Fire and heat resistant laminating resins based on maleimide and citraconimide substituted 1 -2,4- and -2,6-diaminobenzenes  
[NASA-CASE-ARC-11533-1] c 27 N87-23751

Wet spinning of solid polyamic acid fibers  
[NASA-CASE-LAR-14162-1] c 27 N90-15259

**POLYBENZIMIDAZOLE**

Polymeric foams from cross-linkable poly-n-arylenebenzimidazoles  
[NASA-CASE-ARC-11008-1] c 27 N78-31232

**POLYBUTADIENE**

New polymers of perfluorobutadiene and method of manufacture Patent application  
[NASA-CASE-NPO-10863] c 06 N70-11251

Method of polymerizing perfluorobutadiene Patent application  
[NASA-CASE-NPO-10447] c 06 N70-11252

Inhibited solid propellant composition containing beryllium hydride  
[NASA-CASE-NPO-10866-1] c 28 N79-14228

**POLYCARBONATES**

Helmet assembly and latch means therefor Patent  
[NASA-CASE-XMS-04935] c 05 N71-11190

Poly(carbonate-mide) polymer  
[NASA-CASE-LAR-13292-1] c 27 N86-24841

Polycarbonate article with chemical resistant coating  
[NASA-CASE-MSC-21503-1] c 27 N90-16925

**POLYCRYSTALS**

Fabrication of polycrystalline solar cells on low-cost substrates  
[NASA-CASE-GSC-12022-1] c 44 N76-28635

Process for utilizing low-cost graphite substrates for polycrystalline solar cells  
[NASA-CASE-GSC-12022-2] c 44 N78-24609

Method for the preparation of inorganic single crystal and polycrystalline electronic materials  
[NASA-CASE-XLE-02545-1] c 76 N79-21910

Quasi-containerless glass formation method and apparatus  
[NASA-CASE-MFS-28090-1] c 27 N87-21111

**POLYESTERS**

Novel polycarboxylic prepolymeric materials and polymers thereof Patent  
[NASA-CASE-NPO-10596] c 06 N71-25929

Apparatus for forming drive belts  
[NASA-CASE-NPO-13205-1] c 31 N74-32917

Stabilized unsaturated polyesters  
[NASA-CASE-NPO-16103-1] c 27 N85-29043

Sulfone-ester polymers containing pendent ethynyl groups  
[NASA-CASE-LAR-13316-1] c 27 N86-27450

Ethynyl terminated ester oligomers and polymers therefrom  
[NASA-CASE-LAR-13118-2] c 27 N87-16907

Tapered, tubular polyester fabric  
[NASA-CASE-MSC-21082-1] c 27 N87-29672

Polyether-polyester graft copolymer  
[NASA-CASE-LAR-13447-1] c 27 N88-18725

**POLYETHER RESINS**

Polyurethanes from fluoroalkyl propyleneglycol polyethers  
[NASA-CASE-MFS-10506] c 06 N73-30100

Fluorohydroxy ethers  
[NASA-CASE-MFS-10507] c 06 N73-30101

Highly fluorinated polymers  
[NASA-CASE-MFS-11492] c 06 N73-30102

Aqueous alkali metal hydroxide insoluble cellulose ether membrane  
[NASA-CASE-XGS-05584-1] c 25 N82-29370

Phenoxy resins containing pendent ethynyl groups and cured resins obtained therefrom  
[NASA-CASE-LAR-13262-1] c 23 N85-28973

Polyether-polyester graft copolymer  
[NASA-CASE-LAR-13447-1] c 27 N88-18725

**POLYIMIDE RESINS**

Polyimide adhesives  
[NASA-CASE-LAR-11397-1] c 27 N75-29263

Polyimide adhesives  
[NASA-CASE-LAR-12181-1] c 27 N78-17205

Low density bismaleimide-carbon microballoon composites — aircraft and submarine compartment safety  
[NASA-CASE-ARC-11040-2] c 24 N78-27184

Mixed diamines for lower melting addition polyimide preparation and utilization  
[NASA-CASE-LAR-12054-1] c 27 N79-33316

Composition and method for making polyimide resin-reinforced fabric  
[NASA-CASE-LEW-12933-1] c 27 N81-19296

Tackifier for addition polyimides containing monoethylphthalate  
[NASA-CASE-LAR-12642-1] c 27 N81-29229

- Low temperature cross linking polyimides  
[NASA-CASE-LEW-12876-2] c 27 N83-29392
- Elastomer-modified phosphorus-containing imide resins  
[NASA-CASE-ARC-11400-1] c 27 N84-14322
- Chemical approach for controlling nadimide cure temperature and rate  
[NASA-CASE-LEW-13770-1] c 27 N84-27885
- Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-2] c 27 N85-21347
- Chemical approach for controlling nadimide cure temperature and rate with maleimide  
[NASA-CASE-LEW-13770-3] c 27 N85-21350
- Chemical approach for controlling nadimide cure temperature and rate with maleimide  
[NASA-CASE-LEW-13770-4] c 27 N85-21351
- Chemical approach for controlling nadimide cure temperature and rate  
[NASA-CASE-LEW-13770-5] c 27 N85-21352
- Chemical control of nadimide cure temperature and rate  
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Method and apparatus for bonding a plastics sleeve onto a metallic body Patent  
[NASA-CASE-XLA-01262] c 15 N71-21404  
Diffusely reflecting paints including polytetrafluoroethylene and method of manufacture  
[NASA-CASE-GSC-12883-1] c 27 N85-29044

**POLYURETHANE FOAM**  
Flexible foam erectable space structures Patent  
[NASA-CASE-XLA-00686] c 31 N70-34135  
Modified polyurethane foams for fuel-fire Patent  
[NASA-CASE-ARC-10098-1] c 06 N71-24739  
Flexible fire retardant polyisocyanate modified neoprene foam — for thermal protective devices  
[NASA-CASE-ARC-10180-1] c 27 N74-12814  
Fiber modified polyurethane foam for ballistic protection  
[NASA-CASE-ARC-10714-1] c 27 N76-15310  
Mixing insert for foam dispensing apparatus  
[NASA-CASE-MFS-20607-1] c 37 N76-19436  
Segmented tubular cushion springs and spring assembly  
[NASA-CASE-ARC-11349-1] c 37 N86-20797

**POLYURETHANE RESINS**  
Hydroxy terminated perfluoro ethers Patent  
[NASA-CASE-NPO-10768] c 06 N71-27254  
Polyurethane resins from hydroxy terminated perfluoro ethers  
[NASA-CASE-NPO-10768-2] c 06 N72-27144  
Highly fluorinated polyurethanes  
[NASA-CASE-NPO-10767-2] c 06 N72-27151  
Polyurethanes of fluorine containing polycarbonates  
[NASA-CASE-MFS-10512] c 06 N73-30099  
Polyurethanes from fluoroalkyl propyleneglycol polyethers  
[NASA-CASE-MFS-10506] c 06 N73-30100  
Fluorine containing polyurethane  
[NASA-CASE-MFS-10509] c 06 N73-30103  
Highly fluorinated polyurethanes  
[NASA-CASE-NPO-10767-1] c 06 N73-33076  
Flame retardant spandex type polyurethanes  
[NASA-CASE-MSC-14331-2] c 27 N78-17213

**POLYVINYL ALCOHOL**  
In situ self cross-linking of polyvinyl alcohol battery separators  
[NASA-CASE-LEW-12972-1] c 44 N79-25481  
Method of cross-linking polyvinyl alcohol and other water soluble resins  
[NASA-CASE-LEW-13103-1] c 27 N80-32516  
In-situ cross linking of polyvinyl alcohol — application to battery separator films  
[NASA-CASE-LEW-13135-2] c 27 N81-24257  
Polyvinyl alcohol battery separator containing inert filler — alkaline batteries  
[NASA-CASE-LEW-13556-1] c 44 N81-27615  
Cross-linked polyvinyl alcohol and method of making same  
[NASA-CASE-LEW-13101-2] c 23 N81-29160  
Polyvinyl alcohol cross-linked with two aldehydes  
[NASA-CASE-LEW-13504-1] c 25 N83-13188

**PONDS**  
Stable density stratification solar pond  
[NASA-CASE-NPO-15419-2] c 44 N85-30474

**PORCELAIN**  
Refractory porcelain enamel passive control coating for high temperature alloys  
[NASA-CASE-MFS-22324-1] c 27 N75-27160

**POROSITY**  
Process for making sheets with parallel pores of uniform size  
[NASA-CASE-GSC-10984-1] c 37 N75-26371  
Krypton based adsorption type cryogenic refrigerator  
[NASA-CASE-NPO-17334-1-CU] c 31 N88-23917  
Porous plug for reducing orifice induced pressure error in airfoils  
[NASA-CASE-LAR-13569-1] c 35 N89-12841  
Method for maintaining precise suction strip porosities  
[NASA-CASE-LAR-13638-1] c 31 N90-19427  
Regenerative Cu La zeolite supported desulfurizing sorbents  
[NASA-CASE-NPO-17480-1-CU] c 25 N90-26098

**POROUS MATERIALS**  
Method of producing refractory bodies having controlled porosity Patent  
[NASA-CASE-LEW-10393-1] c 17 N71-15468

Multilayer porous ionizer Patent  
[NASA-CASE-XNP-04338] c 17 N71-23046  
Fluid lubricant system Patent  
[NASA-CASE-XNP-03972] c 15 N71-23048  
Method and device for detecting voids in low density material Patent  
[NASA-CASE-MFS-20044] c 14 N71-28993  
Fabrication of controlled-porosity metals Patent  
[NASA-CASE-XNP-04339] c 17 N71-29137  
Compressible biomedical electrode  
[NASA-CASE-MSC-13648] c 05 N72-27103  
Porous electrode comprising a bonded stack of pieces of corrugated metal foil  
[NASA-CASE-GSC-11368-1] c 09 N73-32108  
Method of making porous conductive supports for electrodes — by electroforming and stacking nickel foils  
[NASA-CASE-GSC-11367-1] c 44 N74-19692  
Fluid valve assembly  
[NASA-CASE-MSC-12731-1] c 37 N78-25426  
Heat exchanger and method of making — bonding rocket chambers with a porous metal matrix  
[NASA-CASE-LEW-12441-1] c 34 N79-13289  
Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-3] c 37 N82-19540  
Densification of porous refractory substrates — space shuttle orbiter tiles  
[NASA-CASE-MSC-18737-1] c 24 N83-13171  
Method of repairing surface damage to porous refractory substrates — space shuttle orbiter tiles  
[NASA-CASE-MSC-18736-1] c 24 N83-13172  
Advanced inorganic separators for alkaline batteries and method of making the same  
[NASA-CASE-LEW-13171-2] c 44 N83-32176  
Water-absorbing capacitor system for measuring relative humidity  
[NASA-CASE-NPO-16544-1-CU] c 35 N87-22953

**POROUS PLATES**  
Method of producing porous tungsten ionizers for ion rocket engines Patent  
[NASA-CASE-XLE-00455] c 28 N70-38197

**PORPHYRINS**  
Method and apparatus for eliminating luminol interference material  
[NASA-CASE-MSC-16260-1] c 51 N80-16714

**PORTABLE EQUIPMENT**  
Split welding chamber Patent  
[NASA-CASE-LEW-11531] c 15 N71-14932  
Portable superclean air column device Patent  
[NASA-CASE-XMF-03212] c 15 N71-22721  
Weld preparation machine Patent  
[NASA-CASE-XKS-07953] c 15 N71-26134  
Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMF-05114-2] c 15 N71-26148  
Cryogenic cooling system Patent  
[NASA-CASE-NPO-10467] c 23 N71-26654  
Boring bar drive mechanism Patent  
[NASA-CASE-XLA-03661] c 15 N71-33518  
One hand backpack harness  
[NASA-CASE-LAR-10102-1] c 05 N72-23085  
Bacterial contamination monitor  
[NASA-CASE-GSC-10879-1] c 14 N72-25413  
Self-recording portable soil penetrometer  
[NASA-CASE-MFS-20774] c 14 N73-19420  
Hand-held photomicroscope  
[NASA-CASE-ARC-10468-1] c 14 N73-33381  
System for enhancing tool-exchange capabilities of a portable wrench  
[NASA-CASE-MFS-22283-1] c 37 N75-33395  
Method of peening and portable peening gun  
[NASA-CASE-MFS-23047-1] c 37 N76-18454  
Portable electrophoresis apparatus using minimum electrolyte  
[NASA-CASE-NPO-13274-1] c 25 N79-10163  
Portable heatable container  
[NASA-CASE-NPO-14237-1] c 44 N80-20808  
Portable device for use in starting air-start-units for aircraft and having cable lead testing capability  
[NASA-CASE-FRC-10113-1] c 33 N80-26599  
Portable appliance security apparatus  
[NASA-CASE-GSC-12399-1] c 33 N81-25299  
Dual-beam skin friction interferometer  
[NASA-CASE-ARC-11354-1] c 74 N83-21949  
Two-dimensional scanner apparatus — flaw detector in small flat plates  
[NASA-CASE-MFS-25687-1] c 35 N84-22928  
Portable reflectance spectrometer  
[NASA-CASE-NPO-13556-1] c 35 N84-33766  
Portable pallet weighing apparatus  
[NASA-CASE-GSC-12789-1] c 35 N85-20294  
Portable remote laser sensor for methane leak detection  
[NASA-CASE-NPO-15790-1] c 36 N85-21631  
Portable 90 degree proof loading device  
[NASA-CASE-MSC-20250-1] c 35 N86-19581

## POSITION SENSING

Acoustic guide for noise-transmission testing of aircraft  
[NASA-CASE-LAR-13111-1-CU] c 71 N87-21652

**PORTABLE LIFE SUPPORT SYSTEMS**  
Portable breathing system — a breathing apparatus using a rebreathing system of heat exchangers for carbon dioxide removal  
[NASA-CASE-MSC-16182-1] c 54 N80-10799

**PORTS (OPENINGS)**  
Evacuation port seal Patent  
[NASA-CASE-XMF-03290] c 15 N71-23256  
Safety shield for vacuum/pressure chamber viewing port  
[NASA-CASE-GSC-12513-1] c 31 N81-19343

**POSITION (LOCATION)**  
Position location system and method Patent  
[NASA-CASE-GSC-10087-2] c 21 N71-13958  
Position location and data collection system and method Patent  
[NASA-CASE-GSC-10083-1] c 30 N71-16090  
Emergency escape system Patent  
[NASA-CASE-XKS-07814] c 15 N71-27067  
Position location system and method  
[NASA-CASE-GSC-10087-3] c 07 N72-12080  
Location identification system  
[NASA-CASE-ERC-10324] c 07 N72-25173  
Cosmic dust or other similar outer space particles impact location detector  
[NASA-CASE-GSC-11291-1] c 25 N72-33696  
Collimator of multiple plates with axially aligned identical random arrays of apertures  
[NASA-CASE-MFS-20546-2] c 14 N73-30389  
Measuring probe position recorder  
[NASA-CASE-LAR-10806-1] c 35 N74-32877  
Vehicle locating system utilizing AM broadcasting station carriers  
[NASA-CASE-NPO-13217-1] c 32 N75-26194  
Impact position detector for outer space particles  
[NASA-CASE-GSC-11829-1] c 35 N75-27331  
Aircraft-mounted crash-activated transmitter device  
[NASA-CASE-MFS-16609-3] c 03 N76-32140  
Twin-capacitive shaft angle encoder with analog output signal  
[NASA-CASE-ARC-10897-1] c 33 N77-31404  
X-ray position detector  
[NASA-CASE-NPO-12087-1] c 74 N81-19898  
Adjustable indicating device for load position  
[NASA-CASE-MFS-28008-1] c 35 N85-20300  
Remote object configuration/orientation determination  
[NASA-CASE-NPO-17436-1-CU] c 35 N89-13764  
Controlled sample orientation and rotation in an acoustic levitator  
[NASA-CASE-NPO-17086-1-CU] c 35 N89-14422  
Acoustic controlled rotation and orientation  
[NASA-CASE-NPO-16995-1-CU] c 71 N90-12289

**POSITION INDICATORS**  
Scanning aspect sensor employing an apertured disc and a commutator  
[NASA-CASE-XGS-08266] c 14 N69-27432  
Angular measurement system Patent  
[NASA-CASE-XMF-00447] c 14 N70-33179  
Position sensing device employing misaligned magnetic field generating and detecting apparatus Patent  
[NASA-CASE-XGS-07514] c 23 N71-16099  
Angular position and velocity sensing apparatus Patent  
[NASA-CASE-XGS-05680] c 14 N71-17585  
Extended area semiconductor radiation detectors and a novel readout arrangement Patent  
[NASA-CASE-XGS-03230] c 14 N71-23401  
Doppler compensation by shifting transmitted object frequency within limits  
[NASA-CASE-GSC-10087-4] c 07 N73-20174  
Meteoroid impact position locator aid for manned space station  
[NASA-CASE-LAR-10629-1] c 35 N75-33367  
Position determination systems — using orbital antenna scan of celestial bodies  
[NASA-CASE-MSC-12593-1] c 17 N76-21250  
Solar cell angular position transducer  
[NASA-CASE-LAR-11999-1] c 44 N80-18552  
Synchronization tracking in pulse position modulation receiver  
[NASA-CASE-NPO-16256-1] c 32 N87-21207  
Aircraft control position indicator  
[NASA-CASE-LAR-12984-1] c 06 N87-22678  
Legislated emergency locating transmitters and emergency position indicating radio beacons  
[NASA-CASE-GSC-12892-1] c 32 N89-14374

**POSITION SENSING**  
Position sensing device employing misaligned magnetic field generating and detecting apparatus Patent  
[NASA-CASE-XGS-07514] c 23 N71-16099

## POSITIONING

- Instrument support with precise lateral adjustment Patent  
[NASA-CASE-XMF-00480] c 14 N70-39898
- Portable alignment tool Patent  
[NASA-CASE-XMF-01452] c 15 N70-41371
- Optical alignment system Patent  
[NASA-CASE-XNP-02029] c 14 N70-41955
- Null device for hand controller Patent  
[NASA-CASE-XLA-01808] c 15 N71-20740
- Rotating raster generator  
[NASA-CASE-FRC-10071-1] c 32 N74-20813
- Low noise lead screw positioner  
[NASA-CASE-NPO-15617-1] c 35 N87-21304
- Alignment positioning mechanism  
[NASA-CASE-MSC-21502-1] c 37 N90-26341
- Method and apparatus for applying a mechanical force to surface  
[NASA-CASE-LAR-14009-1] c 37 N90-27115

## POSITIONING DEVICES (MACHINERY)

- Swivel support for gas bearings Patent  
[NASA-CASE-XMF-07808] c 15 N71-23812
- Caterpillar micro positioner  
[NASA-CASE-GSC-10780-1] c 14 N72-16283
- Positioning mechanism  
[NASA-CASE-NPO-10679] c 15 N72-21462
- Test stand system for vacuum chambers  
[NASA-CASE-MFS-21362] c 11 N73-20267
- Method and apparatus for optically monitoring the angular position of a rotating mirror  
[NASA-CASE-GSC-11353-1] c 74 N74-21304
- Automatic focus control for facsimile cameras  
[NASA-CASE-LAR-11213-1] c 35 N75-15014
- Reference apparatus for medical ultrasonic transducer  
[NASA-CASE-ARC-10753-1] c 54 N75-27760
- Controlled caging and uncaging mechanism  
[NASA-CASE-GSC-11063-1] c 37 N77-27400
- Workpiece positioning vise  
[NASA-CASE-GSC-12762-1] c 37 N84-28083
- Load positioning system with gravity compensation  
[NASA-CASE-ARC-11525-1] c 37 N86-27629
- Gripping device  
[NASA-CASE-MSC-21365-1] c 37 N90-20408

## POSITIVE FEEDBACK

- Complementary regenerative switch Patent  
[NASA-CASE-XGS-02751] c 09 N71-23015

## POSITRONS

- Slow positron beam generator for lifetime studies  
[NASA-CASE-LAR-14250-1-SB] c 72 N90-27472

## POTABLE WATER

- Recovery of potable water from human wastes in below-G conditions Patent  
[NASA-CASE-XLA-03213] c 05 N71-11207
- Compact solar still Patent  
[NASA-CASE-XMS-04533] c 15 N71-23086
- Specialized halogen generator for purification of water Patent  
[NASA-CASE-XLA-08913] c 14 N71-28933
- Potable water dispenser  
[NASA-CASE-MFS-21115-1] c 54 N74-12779
- Metering gun for dispensing precisely measured charges of fluid  
[NASA-CASE-MFS-21163-1] c 54 N74-17853
- Iodine generator for reclaimed water purification  
[NASA-CASE-MSC-14632-1] c 54 N78-14784
- Degassing and mixing apparatus for liquids — potable water for spacecraft  
[NASA-CASE-MSC-18936-1] c 35 N83-29652

## POTASSIUM SILICATES

- Fire resistant coating composition Patent  
[NASA-CASE-GSC-10072] c 18 N71-14014

## POTENTIOMETERS

- Angle detector  
[NASA-CASE-ARC-11036-1] c 35 N78-32395

## POTENTIOMETERS (INSTRUMENTS)

- Two-axis controller Patent  
[NASA-CASE-XFR-04104] c 03 N70-42073
- Control device Patent  
[NASA-CASE-XAC-10019] c 15 N71-23809
- Line following servosystem Patent  
[NASA-CASE-XAC-00001] c 15 N71-28952
- Indirect microbial detection  
[NASA-CASE-LAR-12520-1] c 51 N81-28698
- Rotary control lock  
[NASA-CASE-NPO-17453-1-CU] c 37 N89-13787

## POTTING COMPOUNDS

- Method and apparatus for shock protection Patent  
[NASA-CASE-XLA-00482] c 15 N70-38409
- Flexible, repairable, portable material for electrical connectors Patent  
[NASA-CASE-XGS-05180] c 18 N71-25881
- Thermally conductive polymers  
[NASA-CASE-GSC-11304-1] c 06 N72-21105

## POWDER (PARTICLES)

- Method for forming pyrrone molding powders and products of said method  
[NASA-CASE-LAR-10423-1] c 23 N82-29358
- Powder fed sheared dispersal particle generator  
[NASA-CASE-LAR-12785-1] c 37 N84-18561

## POWDER METALLURGY

- Process of casting heavy slips Patent  
[NASA-CASE-XLE-00106] c 15 N71-16076
- Fabrication of controlled-porosity metals Patent  
[NASA-CASE-XNP-04339] c 17 N71-29137
- Method of making dry electrodes  
[NASA-CASE-FRC-10029-2] c 05 N72-25121
- Method for producing dispersion strengthened alloys by converting metal to a halide, comminuting, reducing the metal halide to the metal and sintering  
[NASA-CASE-LEW-10450-1] c 15 N72-25448
- Method of forming superalloys  
[NASA-CASE-LEW-10805-1] c 15 N73-13465
- Method of heat treating a formed powder product material  
[NASA-CASE-LEW-10805-3] c 26 N74-10521
- Method of forming articles of manufacture from superalloy powders  
[NASA-CASE-LEW-10805-2] c 37 N74-13179
- Cermet composition and method of fabrication — heat resistant alloys and powders  
[NASA-CASE-NPO-13120-1] c 27 N76-15311
- Oxidation resistant slurry coating for carbon-based materials  
[NASA-CASE-LEW-13923-1] c 26 N85-35267
- Method of coating a substrate with a rapidly solidified metal  
[NASA-CASE-GSC-12880-1] c 26 N86-32550
- One step HIP canning of powder metallurgy composites  
[NASA-CASE-LEW-14719-1] c 24 N90-23493

## POWDERED ALUMINUM

- Aluminum ion-containing polyimide adhesives  
[NASA-CASE-LAR-12640-1] c 27 N82-11206

## POWER AMPLIFIERS

- Ac power amplifier Patent Application  
[NASA-CASE-LAR-10218-1] c 09 N70-34559
- Power supply Patent  
[NASA-CASE-XMS-02159] c 10 N71-22961
- Broadband stable power multiplier Patent  
[NASA-CASE-XNP-10854] c 10 N71-26331
- Signal path series step biased multidevice high efficiency amplifier Patent  
[NASA-CASE-GSC-10668-1] c 07 N71-28430
- Isolated output system for a class D switching-mode amplifier  
[NASA-CASE-MFS-21618-1] c 33 N75-30429

## POWER CONDITIONING

- Module failure isolation circuit for paralleled inverters — preventing system failure during power conditioning for spacecraft applications  
[NASA-CASE-NPO-14000-1] c 33 N79-24254
- Self-reconfiguring solar cell system  
[NASA-CASE-LEW-12586-1] c 44 N80-14472
- Inelastic tunnel diodes  
[NASA-CASE-LEW-13833-1] c 33 N85-21492
- Power supply conditioning circuit  
[NASA-CASE-NPO-17233-1-CU] c 33 N88-29095

## POWER CONVERTERS

- Gas-to-hydraulic power converter  
[NASA-CASE-MSC-18794-1] c 44 N83-14693

## POWER EFFICIENCY

- Low power drain semi-conductor circuit  
[NASA-CASE-XGS-04999] c 09 N69-24317
- Excitation and detection circuitry for a flux responsive magnetic head  
[NASA-CASE-XNP-04183] c 09 N69-24329
- Apparatus for increasing ion engine beam density Patent  
[NASA-CASE-XLE-00519] c 28 N70-41576
- Gaseous control system for nuclear reactors  
[NASA-CASE-XLE-04599] c 22 N72-20597
- Remote platform power conserving system  
[NASA-CASE-GSC-11182-1] c 15 N75-13007
- Family of airfoil shapes for rotating blades — for increased power efficiency and blade stability  
[NASA-CASE-LAR-12843-1] c 02 N84-11136
- Increased voltage photovoltaic cell  
[NASA-CASE-NPO-16155-1] c 44 N85-30475
- Wingtip vortex propeller  
[NASA-CASE-LAR-13019-1] c 07 N85-35194
- Linearized traveling wave amplifier with hard limiter characteristics  
[NASA-CASE-LEW-13981-2] c 33 N86-21742
- Low power consumption current transducer  
[NASA-CASE-NPO-16888-1-CU] c 33 N89-29681
- Permanent magnet flux-biased magnetic actuator with flux feedback  
[NASA-CASE-LAR-13785-1] c 70 N90-17403

## POWER FACTOR CONTROLLERS

- Triac failure detector  
[NASA-CASE-MFS-25607-1] c 33 N83-34190
- Control system for an induction motor with energy recovery  
[NASA-CASE-MFS-25477-1] c 33 N84-14424
- Motor power control circuit for ac induction motors  
[NASA-CASE-MFS-25323-1] c 33 N84-22886
- Solar powered actuator with continuously variable auxiliary power control  
[NASA-CASE-MFS-25637-1] c 44 N85-21769
- Power control for ac motor  
[NASA-CASE-MFS-25861-1] c 33 N85-22877

## POWER GAIN

- Serrodyne frequency converter re-entrant amplifier system Patent  
[NASA-CASE-XGS-01022] c 07 N71-16088
- CRT blanking and brightness control circuit  
[NASA-CASE-KSC-10647-1] c 10 N72-31273

## POWER LIMITERS

- Monostable multivibrator  
[NASA-CASE-GSC-10082-1] c 10 N72-20221

## POWER LINES

- Electrical connector for flat cables Patent  
[NASA-CASE-XMF-00324] c 09 N70-34596
- Motor run-up system — power lines  
[NASA-CASE-NPO-13374-1] c 33 N75-19524
- Apparatus including a plurality of spaced transformers for locating short circuits in cables  
[NASA-CASE-KSC-10899-1] c 33 N79-18193
- Shielded conductor cable system  
[NASA-CASE-MSC-12745-1] c 33 N81-27397
- Electrical power generating system  
[NASA-CASE-MFS-25302-1] c 33 N83-28319
- Rotatable electric cable connecting system  
[NASA-CASE-GSC-12899-1] c 33 N88-20669

## POWER REACTORS

- Low power consumption current transducer  
[NASA-CASE-NPO-16888-1-CU] c 33 N89-29681

## POWER SERIES

- Computing apparatus Patent  
[NASA-CASE-XGS-04765] c 08 N71-18693
- Phase modulating with odd and even finite power series of a modulating signal  
[NASA-CASE-LAR-11607-1] c 32 N77-14292

## POWER SPECTRA

- Method and apparatus for high resolution spectral analysis  
[NASA-CASE-NPO-10748] c 08 N72-20177
- Instrument for determining coincidence and elapse time between independent sources of random sequential events  
[NASA-CASE-LAR-12531-1] c 35 N83-29651

## POWER SUPPLIES

- Tape recorder Patent  
[NASA-CASE-XGS-08259] c 14 N71-23698
- Current dependent filter inductance  
[NASA-CASE-ERC-10139] c 09 N72-17154
- Power supply for carbon dioxide lasers  
[NASA-CASE-GSC-11222-1] c 16 N73-32391
- High voltage distributor  
[NASA-CASE-GSC-11849-1] c 33 N76-16332
- Method and apparatus for precision control of radiometer  
[NASA-CASE-NPO-15398-1] c 35 N84-22931

## POWER SUPPLY CIRCUITS

- Regulated dc to dc converter  
[NASA-CASE-XGS-03429] c 03 N69-21330
- Power control circuit  
[NASA-CASE-XNP-02713] c 10 N69-39888
- Electronic amplifier with power supply switching Patent  
[NASA-CASE-XMS-00945] c 09 N71-10798
- Heat pipe thermionic diode power system Patent  
[NASA-CASE-XMF-05843] c 03 N71-11055
- Pulsed energy power system Patent  
[NASA-CASE-MSC-13112] c 03 N71-11057
- Data processor having multiple sections activated at different times by selective power coupling to the sections Patent  
[NASA-CASE-XGS-04767] c 08 N71-12494
- Microwave power receiving antenna Patent  
[NASA-CASE-MFS-20333] c 09 N71-13486
- Regulated power supply Patent  
[NASA-CASE-XMS-01991] c 09 N71-21449
- Power supply Patent  
[NASA-CASE-XMS-02159] c 10 N71-22961
- Polarity sensitive circuit Patent  
[NASA-CASE-XNP-00952] c 10 N71-23271
- Power supply circuit Patent  
[NASA-CASE-XMS-00913] c 10 N71-23543
- Drive circuit for minimizing power consumption in inductive load Patent  
[NASA-CASE-NPO-10716] c 09 N71-24892
- Unsaturation saturable core transformer Patent  
[NASA-CASE-ERC-10125] c 09 N71-24893



Voltage dropout sensor Patent  
[NASA-CASE-KSC-10020] c 10 N71-27338

Maximum power point tracker Patent  
[NASA-CASE-GSC-10376-1] c 14 N71-27407

High power microwave power divider Patent  
[NASA-CASE-NPO-11031] c 07 N71-33606

Ripple indicator  
[NASA-CASE-KSC-10162] c 09 N72-11225

A dc to ac to dc converter having transistor synchronous rectifiers  
[NASA-CASE-GSC-11126-1] c 09 N72-25253

LC-oscillator with automatic stabilized amplitude via bias current control — power supply circuit for transducers  
[NASA-CASE-MFS-21698-1] c 33 N74-26732

Integrable power gyrator — with Z-matrix design using parallel transistors  
[NASA-CASE-MFS-22342-1] c 33 N75-30428

The dc-to-dc converters employing staggered-phase power switches with two-loop control  
[NASA-CASE-NPO-13512-1] c 33 N77-10428

Control for nuclear thermionic power source  
[NASA-CASE-NPO-13114-2] c 73 N78-28913

Closed Loop solar array-ion thruster system with power control circuitry  
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[NASA-CASE-XNP-06942] c 28 N71-23293

Flexible conductive disc electrode Patent  
[NASA-CASE-FRC-10029] c 09 N71-24618

Star tracking reticles  
[NASA-CASE-GSC-11188-1] c 14 N73-32320

Process for making sheets with parallel pores of uniform size  
[NASA-CASE-GSC-10984-1] c 37 N75-26371

Solar cell collector and method for producing same  
[NASA-CASE-LEW-12552-2] c 44 N79-11472

Multilevel metallization method for fabricating a metal oxide semiconductor device  
[NASA-CASE-MFS-23541-1] c 76 N79-14906

Solar array strip and a method for forming the same  
[NASA-CASE-NPO-13652-1] c 44 N79-17314

Method of fabricating a photovoltaic module of a substantially transparent construction  
[NASA-CASE-NPO-14303-1] c 44 N80-18550

Apparatus for use in the production of ribbon-shaped crystals from a silicon melt  
[NASA-CASE-NPO-14297-1] c 33 N81-19389

Method and apparatus for producing concentric hollow spheres — inertial confinement fusion targets  
[NASA-CASE-NPO-14596-1] c 31 N81-33319

Apparatus for sequentially transporting containers  
[NASA-CASE-MFS-23846-1] c 37 N82-32731

Solar cell having improved back surface reflector  
[NASA-CASE-LEW-13620-1] c 44 N83-13579

Method of increasing minority carrier lifetime in silicon web or the like  
[NASA-CASE-NPO-15530-1] c 76 N83-35888

Method for sequentially processing a multi-level interconnect circuit in a vacuum chamber  
[NASA-CASE-MFS-256704-1] c 33 N84-22884

**PROJECTILES**

Self-obturing, gas operated launcher  
[NASA-CASE-NPO-11013] c 11 N72-22247

Two stage light gas-plasma projectile accelerator  
[NASA-CASE-MFS-22287-1] c 75 N76-14931

**PROJECTION**

Projection system for display of parallax and perspective  
[NASA-CASE-MFS-23194-1] c 35 N78-17357

**PROJECTIVE GEOMETRY**

Projection system for display of parallax and perspective  
[NASA-CASE-MFS-23194-1] c 35 N78-17357

**PROJECTORS**

Optical projector system Patent  
[NASA-CASE-XNP-03853] c 23 N71-21882

System and method for obtaining wide screen Schlieren photographs  
[NASA-CASE-NPO-14174-1] c 74 N79-20856

Large TV display system  
[NASA-CASE-NPO-16932-1CU] c 33 N87-15413

**PROPAGATION MODES**

Dual waveguide mode source having control means for adjusting the relative amplitude of two modes Patent  
[NASA-CASE-XNP-03134] c 07 N71-10676

**PROPAGATION VELOCITY**

Double reference pulsed phase locked loop  
[NASA-CASE-LAR-13310-1] c 32 N87-14559

**PROPARGYL GROUPS**

Thermoset-thermoplastic aromatic polyamide containing N-propargyl groups  
[NASA-CASE-LAR-12723-2] c 27 N84-22746

Thermoset-thermoplastic aromatic polyamide containing N-propargyl groups  
[NASA-CASE-LAR-12723-1] c 27 N85-20123

**PROPELLANT ACTUATED INSTRUMENTS**

Pressure limiting propellant actuating system  
[NASA-CASE-MSC-18179-1] c 20 N80-18097

**PROPELLANT ADDITIVES**

Inhibited solid propellant composition containing beryllium hydride  
[NASA-CASE-NPO-10866-1] c 28 N79-14228

**PROPELLANT BINDERS**

Method of forming difunctional polyisobutylene  
[NASA-CASE-NPO-10893] c 27 N73-22710

Recovery of aluminum from composite propellants  
[NASA-CASE-NPO-14110-1] c 28 N81-15119

**PROPELLANT CASTING**

Casting propellant in rocket engine  
[NASA-CASE-LAR-11995-1] c 28 N77-10213

Solid propellant rocket motor and method of making same  
[NASA-CASE-XLA-01349] c 20 N77-17143

**PROPELLANT CHEMISTRY**

Nitramine propellants — gun propellant burning rate  
[NASA-CASE-NPO-14103-1] c 28 N78-31255

**PROPELLANT COMBUSTION**

Spherically-shaped rocket motor Patent  
[NASA-CASE-XHQ-01897] c 28 N70-35381

Control of transverse instability in rocket combustors Patent  
[NASA-CASE-XLE-04603] c 33 N71-21507

**PROPELLANT DECOMPOSITION**

Decomposition unit Patent  
[NASA-CASE-XMS-00583] c 28 N70-38504

**PROPELLANT GRAINS**

Propellant grain for rocket motors Patent  
[NASA-CASE-XGS-03556] c 27 N70-35534

**PROPELLANT TANKS**

Liquid rocket system Patent  
[NASA-CASE-XNP-00610] c 28 N70-36910

Slosh suppressing device and method Patent  
[NASA-CASE-XMF-00658] c 12 N70-38997

Measuring device Patent  
[NASA-CASE-XMS-01546] c 14 N70-40233

Zero gravity starting means for liquid propellant motors Patent  
[NASA-CASE-XNP-01390] c 28 N70-41275

Tank construction for space vehicles Patent  
[NASA-CASE-XMF-01899] c 31 N70-41948

Method and apparatus for detection and location of microleaks Patent  
[NASA-CASE-XMF-02307] c 14 N71-10779

Method of making a filament-wound container Patent  
[NASA-CASE-XLE-03803-2] c 15 N71-17651

Slosh alleviator Patent  
[NASA-CASE-XLA-05749] c 15 N71-19569

Booster tank system Patent  
[NASA-CASE-MSC-12390] c 27 N71-29155

Space vehicle system  
[NASA-CASE-MSC-12561-1] c 18 N76-17185

Passive propellant system  
[NASA-CASE-MFS-23642-2] c 20 N78-27176

Space Shuttle with rail system and aft thrust structure securing solid rocket boosters to external tank  
[NASA-CASE-MFS-25853-1] c 16 N84-27784

Three stage rocket vehicle with parallel staging  
[NASA-CASE-MFS-25878-1] c 18 N84-27787

**PROPELLANT TRANSFER**

Fluid coupling Patent  
[NASA-CASE-XLE-00397] c 15 N70-36492

Apparatus for transferring cryogenic liquids Patent  
[NASA-CASE-XLE-00345] c 15 N70-38020

Method for continuous variation of propellant flow and thrust in propulsive devices Patent  
[NASA-CASE-XLE-00177] c 28 N70-40387

Fluid dispensing apparatus and method Patent  
[NASA-CASE-XLE-01182] c 27 N71-15635

Electrostatic ion rocket engine Patent  
[NASA-CASE-XLE-02068] c 28 N71-15661

Control of transverse instability in rocket combustors Patent  
[NASA-CASE-XLE-04603] c 33 N71-21507

Vapor liquid separator Patent  
[NASA-CASE-XMF-04042] c 15 N71-23023

Filler valve Patent  
[NASA-CASE-XNP-01747] c 15 N71-23024

Propellant feed isolator Patent  
[NASA-CASE-LEW-10210-1] c 28 N71-26781

Spherical shield Patent  
[NASA-CASE-XNP-01855] c 15 N71-28937

## PROTECTIVE CLOTHING

Passive propellant system  
[NASA-CASE-MFS-23642-2] c 20 N78-27176

Three stage rocket vehicle with parallel staging  
[NASA-CASE-MFS-25878-1] c 18 N84-27787

**PROPELLANTS**

Ignitability test method and apparatus  
[NASA-CASE-LAR-13996-1SB] c 25 N90-15161

**PROPELLER BLADES**

Propeller blade loading control Patent  
[NASA-CASE-XAC-00139] c 02 N70-34856

**PROPELLER EFFICIENCY**

Over-the-wing propeller  
[NASA-CASE-LAR-13134-2] c 07 N87-16828

**PROPELLERS**

Heads up display  
[NASA-CASE-LAR-12630-1] c 06 N84-27733

Wingtip vortex propeller  
[NASA-CASE-LAR-13019-1] c 07 N85-35194

High lift, low pitching moment airfoils  
[NASA-CASE-LAR-13215-1] c 02 N89-14224

**PROPORTIONAL CONTROL**

Proportional controller Patent  
[NASA-CASE-XAC-03392] c 03 N70-41954

**PROPULSION SYSTEM CONFIGURATIONS**

Electro-thermal rocket Patent  
[NASA-CASE-XLE-00267] c 28 N70-33356

Propellant grain for rocket motors Patent  
[NASA-CASE-XGS-03556] c 27 N70-35534

Composite powerplant and shroud therefor Patent  
[NASA-CASE-XLA-01043] c 28 N71-10780

Annular slit colloid thruster Patent  
[NASA-CASE-GSC-10709-1] c 28 N71-25213

Propellant tank pressurization system Patent  
[NASA-CASE-XNP-00650] c 27 N71-28929

Apparatus for endoscopic examination — analysis of the propulsion system configuration and transmitter  
[NASA-CASE-NPO-14092-1] c 52 N80-16725

Aerospace vehicle  
[NASA-CASE-LAR-13155-1] c 05 N86-19310

Propulsion apparatus and method using boil-off gas from a cryogenic liquid  
[NASA-CASE-MFS-25946-1] c 20 N86-26368

Over-the-wing propeller  
[NASA-CASE-LAR-13134-2] c 07 N87-16828

**PROPULSION SYSTEM PERFORMANCE**

Variable mixer propulsion cycle  
[NASA-CASE-LEW-12917-1] c 07 N78-18067

**PROPYLENE**

Stabilized unsaturated polyesters  
[NASA-CASE-NPO-16103-1] c 27 N85-29043

**PROSTHETIC DEVICES**

Tactile sensing means for prosthetic limbs  
[NASA-CASE-MFS-16570-1] c 05 N73-32013

Orthotic arm joint — for use in mechanical arms  
[NASA-CASE-MFS-21611-1] c 54 N75-12616

Actuator device for artificial leg  
[NASA-CASE-MFS-23225-1] c 52 N77-14735

Aldehyde-containing urea-absorbing polysaccharides  
[NASA-CASE-NPO-13620-1] c 27 N77-30236

Rotational joint assembly for the prosthetic leg  
[NASA-CASE-KSC-11004-1] c 54 N77-30749

Mechanical energy storage device for hip disarticulation  
[NASA-CASE-ARC-10916-1] c 52 N78-10686

Method of adhering bone to a rigid substrate using a graphite fiber reinforced bone cement  
[NASA-CASE-NPO-13764-1] c 27 N78-17215

Compact artificial hand  
[NASA-CASE-NPO-13906-1] c 54 N79-24652

Prosthesis coupling  
[NASA-CASE-KSC-11069-1] c 52 N79-26772

Prosthetic urinary sphincter  
[NASA-CASE-MFS-23717-1] c 52 N81-25660

Texturing polymer surfaces by transfer casting — cardiovascular prosthesis  
[NASA-CASE-LEW-13120-1] c 27 N82-28440

Prosthetic occlusive device for an internal passageway  
[NASA-CASE-MFS-25740-1] c 52 N84-11744

Rotationally actuated prosthetic helping hand  
[NASA-CASE-MFS-28426-1] c 54 N90-27261

**PROTECTION**

Apparatus and method for protecting a photographic device Patent  
[NASA-CASE-NPO-10174] c 14 N71-18465

Fiber modified polyurethane foam for ballistic protection  
[NASA-CASE-ARC-10714-1] c 27 N76-15310

Lightning discharge protection rod  
[NASA-CASE-LAR-13470-1] c 03 N88-14083

Pressure rig for repetitive casting  
[NASA-CASE-LAR-14050-1] c 31 N90-21216

**PROTECTIVE CLOTHING**

Process for conditioning tanned sharkskin and articles made therefrom Patent  
[NASA-CASE-XMS-09691-1] c 18 N71-15545

Biological isolation garment Patent  
[NASA-CASE-MSC-12206-1] c 05 N71-17599  
Garments for controlling the temperature of the body  
Patent  
[NASA-CASE-XMS-10269] c 05 N71-24147  
Foreshortened convolute section for a pressurized suit  
Patent  
[NASA-CASE-XMS-09637-1] c 05 N71-24730  
Protective suit having an audio transceiver Patent  
[NASA-CASE-KSC-10164] c 07 N71-33108  
Protective garment ventilation system  
[NASA-CASE-XMS-04928] c 54 N78-17679  
Ultra-violet process for producing flame resistant  
polyamides and products produced thereby — protective  
clothing for high oxygen environments  
[NASA-CASE-MSC-18074-1] c 27 N80-26446  
Heat resistant protective hand covering  
[NASA-CASE-MSC-20261-2] c 54 N84-23113  
Hazards protection for space suits and spacecraft  
[NASA-CASE-MSC-21366-1] c 54 N89-12206

**PROTECTIVE COATINGS**  
Coating process  
[NASA-CASE-XNP-06508] c 18 N69-39895  
Alkali-metal silicate protective coating  
[NASA-CASE-XGS-04119] c 18 N69-39979  
Process for applying a protective coating for salt bath  
brazing Patent  
[NASA-CASE-XLE-00046] c 15 N70-33311  
Method and apparatus for shock protection Patent  
[NASA-CASE-XLA-00482] c 15 N70-36409  
Thermal control of space vehicles Patent  
[NASA-CASE-XLA-01291] c 33 N70-36617  
Process for preparing sterile solid propellants Patent  
[NASA-CASE-XNP-01749] c 27 N70-41897  
Fire resistant coating composition Patent  
[NASA-CASE-GSC-10072] c 18 N71-14014  
Bacteriostatic conformal coating and methods of  
application Patent  
[NASA-CASE-GSC-10007] c 18 N71-16046  
Method of coating carbonaceous base to prevent  
oxidation destruction and coated base Patent  
[NASA-CASE-XLA-00284] c 15 N71-16075  
Method of coating carbonaceous base to prevent  
oxidation destruction and coated base Patent  
[NASA-CASE-XLA-00302] c 15 N71-16077  
Aerodynamic protection for space flight vehicles  
Patent  
[NASA-CASE-XNP-02507] c 31 N71-17679  
Heat protection apparatus Patent  
[NASA-CASE-XLA-00892] c 33 N71-17897  
Bismuth-lead coatings for gas bearings used in  
atmospheric environments and vacuum chambers Patent  
[NASA-CASE-XGS-02011] c 15 N71-20739  
Alkali metal silicate protective coating Patent  
[NASA-CASE-XGS-04799] c 18 N71-24183  
Process for reducing secondary electron emission  
Patent  
[NASA-CASE-XNP-09469] c 24 N71-25555  
Solid state thermal control polymer coating Patent  
[NASA-CASE-XLA-01745] c 33 N71-28903  
Method of coating through-holes Patent  
[NASA-CASE-XMF-05999] c 15 N71-29032  
Potassium silicate zinc coatings  
[NASA-CASE-GSC-10361-1] c 18 N72-23581  
Method of coating solar cell with borosilicate glass and  
resultant product  
[NASA-CASE-GSC-11514-1] c 03 N72-24037  
Semiconductor surface protection material  
[NASA-CASE-ERC-10339-1] c 18 N73-30532  
Nonflammable coating compositions — for use in high  
oxygen environments  
[NASA-CASE-MFS-20486-2] c 27 N74-17283  
Fused silicide coatings containing discrete particles for  
protecting niobium alloys — used in space shuttle thermal  
protection systems and turbine engine components  
[NASA-CASE-LEW-11179-1] c 27 N76-16229  
High temperature oxidation resistant cermet  
compositions  
[NASA-CASE-NPO-13666-1] c 27 N77-13217  
Leading edge protection for composite blades  
[NASA-CASE-LEW-12550-1] c 24 N77-19170  
Intumescent coatings containing 4,4'-dinitrosulfanilide  
[NASA-CASE-ARC-11042-1] c 24 N78-14096  
Sprayable low density ablator and application process  
[NASA-CASE-MFS-23506-1] c 24 N78-24290  
Reaction cured glass and glass coatings  
[NASA-CASE-ARC-11051-1] c 27 N78-32260  
Infusible silazane polymer and process for producing  
same — protective coatings  
[NASA-CASE-XMF-02526-1] c 27 N79-21190  
Fire protection covering for small diameter missiles  
[NASA-CASE-ARC-11104-1] c 15 N79-26100  
Improved refractory coatings — sputtered coatings on  
substrates that form stable nitrides  
[NASA-CASE-LEW-23169-2] c 26 N81-16209

Corrosion resistant thermal barrier coating — protecting  
gas turbines and other engine parts  
[NASA-CASE-LEW-13088-1] c 26 N81-25188  
Heat sealable, flame and abrasion resistant coated fabric  
— clothing and containers for space exploration  
[NASA-CASE-MSC-18382-1] c 27 N82-16238  
Method of protecting a surface with a  
silicon-slurry/aluminide coating — coatings for gas turbine  
engine blades and vanes  
[NASA-CASE-LEW-13343-1] c 27 N82-28441  
Curved film cooling admission tube  
[NASA-CASE-LEW-13174-1] c 34 N83-27144  
Silicon-slurry/aluminide coating — protecting gas turbine  
engine vanes and blades  
[NASA-CASE-LEW-13343] c 26 N83-31795  
Covering solid, film cooled surfaces with a duplex thermal  
barrier coating  
[NASA-CASE-LEW-13450-1] c 31 N83-35177  
Heat sealable, flame and abrasion resistant coated  
fabric  
[NASA-CASE-MSC-18382-2] c 27 N84-14324  
Method and apparatus for coating substrates using a  
laser  
[NASA-CASE-LEW-13526-1] c 36 N84-22944  
Coating with overlay metallic-cermet alloy systems  
[NASA-CASE-LEW-13639-2] c 26 N84-27855  
Overlay metallic-cermet alloy coating systems  
[NASA-CASE-LEW-13639-1] c 26 N84-33555  
Corrosion resistant coating  
[NASA-CASE-NPO-15928-1] c 26 N85-29005  
Spray applicator for spraying coatings and other fluids  
in space  
[NASA-CASE-MSC-18852-1] c 37 N85-29283  
Oxidation protection coatings for polymers  
[NASA-CASE-LEW-14072-1] c 27 N86-19458  
Process for preparing essentially colorless polyimide film  
containing phenoxy-linked diamines  
[NASA-CASE-LAR-13553-1] c 27 N86-29039  
Apparatus for producing oxidation protection coatings  
for polymers  
[NASA-CASE-LEW-14072-2] c 27 N86-32569  
Nickel base coating alloy  
[NASA-CASE-LEW-13834-1] c 26 N87-14482  
Oxidation protection coatings for polymers  
[NASA-CASE-LEW-14072-3] c 27 N87-23736  
Oxygen diffusion barrier coating  
[NASA-CASE-LAR-13474-1-SB] c 26 N87-25455  
Polycarbonate article with chemical resistant coating  
[NASA-CASE-MSC-21503-1] c 27 N90-16925  
Hazards protection for space suits and spacecraft  
[NASA-CASE-MSC-21366-1] c 54 N90-25498

**PROTECTORS**  
Load cell protection device Patent  
[NASA-CASE-XMS-06782] c 32 N71-15974  
Omnidirectional multiple impact landing system Patent  
[NASA-CASE-XLA-09881] c 31 N71-16085  
Protective telescoping shield for solar concentrator  
[NASA-CASE-NPO-16236-1] c 44 N86-27706

**PROTEINS**  
Protein sterilization method of firefly luciferase using  
reduced pressure and molecular sieves  
[NASA-CASE-GSC-10225-1] c 06 N73-27086  
Hanging drop crystal growth apparatus and method  
[NASA-CASE-MFS-28206-1-SB] c 76 N90-23242  
Crystal growth apparatus  
[NASA-CASE-MFS-28182-1] c 76 N90-24169  
Pseudomonas diagnostic assay  
[NASA-CASE-NPO-17653-1-CU] c 51 N90-27239

**PROTOCOL (COMPUTERS)**  
Multicomputer communication system  
[NASA-CASE-NPO-15433-1] c 32 N85-21428  
Method and apparatus for positioning a robotic end  
effector  
[NASA-CASE-MSC-21476-1] c 37 N90-17137

**PROTON FLUX DENSITY**  
Flame detector operable in presence of proton  
radiation  
[NASA-CASE-MFS-21577-1] c 19 N74-29410

**PROXIMITY**  
Focal plane array optical proximity sensor  
[NASA-CASE-NPO-15155-1] c 74 N85-22139  
Distributed proximity sensor system  
[NASA-CASE-NPO-17275-1-CU] c 37 N89-29750

**PSEUDOMONAS**  
Pseudomonas diagnostic assay  
[NASA-CASE-NPO-17653-1-CU] c 51 N90-27239

**PSEUDONOISE**  
Rapid sync acquisition system Patent  
[NASA-CASE-NPO-10214] c 10 N71-26577  
Pseudonoise sequence generators with three tap linear  
feedback shift registers  
[NASA-CASE-NPO-11406] c 08 N73-12175  
Two carrier communication system with single  
transmitter  
[NASA-CASE-NPO-11548] c 07 N73-26118

Pseudo-noise test set for communication system  
evaluation — test signals  
[NASA-CASE-MFS-22671-1] c 35 N75-21582  
Pseudonoise code tracking loop  
[NASA-CASE-MSC-18035-1] c 32 N81-15179

**PULLEYS**  
Tension measurement device Patent  
[NASA-CASE-XMS-04545] c 15 N71-22878  
Tensile strength testing device Patent  
[NASA-CASE-XNP-05634] c 15 N71-24834

**PULLING**  
Dual motion valve with single motion input  
[NASA-CASE-MFS-28058-1] c 37 N87-21332

**PULMONARY CIRCULATION**  
Resuscitation apparatus Patent  
[NASA-CASE-XMS-01115] c 05 N70-39922

**PULMONARY FUNCTIONS**  
Instrument for use in performing a controlled Valsalva  
maneuver Patent  
[NASA-CASE-XMS-01615] c 05 N70-41329

**PULSE AMPLITUDE**  
System for monitoring signal amplitude ranges  
[NASA-CASE-XMS-04061-1] c 09 N69-39885  
Analog to digital converter Patent  
[NASA-CASE-XLA-00670] c 08 N71-12501  
Pulse amplitude and width detector Patent  
[NASA-CASE-XMF-06519] c 09 N71-12519  
Analog-to-digital converter  
[NASA-CASE-NPO-00477] c 08 N73-28045  
Electro-mechanical sine/cosine generator  
[NASA-CASE-LAR-11389-1] c 33 N77-26387  
Speech analyzer  
[NASA-CASE-GSC-11898-1] c 32 N77-30309  
Power factor control system for ac induction motors  
[NASA-CASE-MFS-23988-1] c 33 N81-27395  
Video processor for air traffic control beacon system  
[NASA-CASE-KSC-11155-1] c 04 N86-19304

**PULSE AMPLITUDE MODULATION**  
Signal ratio system utilizing voltage controlled oscillators  
Patent  
[NASA-CASE-XMF-04367] c 09 N71-23545  
Pulse switching for high energy lasers  
[NASA-CASE-NPO-14556-1] c 33 N82-24418

**PULSE CODE MODULATION**  
Adaptive compression of communication signals  
Patent  
[NASA-CASE-XLA-03076] c 07 N71-11266  
Bi-polar phase detector and corrector for split phase  
PCM data signals Patent  
[NASA-CASE-XGS-01590] c 07 N71-12392  
System for recording and reproducing pulse code  
modulated data Patent  
[NASA-CASE-XGS-01021] c 08 N71-21042  
Frequency shift keying apparatus Patent  
[NASA-CASE-XGS-01537] c 07 N71-23405  
Data compression system  
[NASA-CASE-NPO-11243] c 07 N72-20154  
Method and apparatus for frequency-division multiplex  
communications by digital phase shift of carrier  
[NASA-CASE-NPO-11338] c 08 N72-25208  
Apparatus for deriving synchronizing pulses from pulses  
in a single channel PCM communications system  
[NASA-CASE-NPO-11302-1] c 07 N73-13149  
Method and apparatus for a single channel digital  
communications system — synchronization of received  
PCM signal by digital correlation with reference signal  
[NASA-CASE-NPO-11302-2] c 32 N74-10132  
Multifunction audio digitizer — producing direct delta and  
pulse code modulation  
[NASA-CASE-MSC-13855-1] c 35 N74-17885  
Pulse code modulated signal synchronizer  
[NASA-CASE-MSC-12462-1] c 32 N74-20809  
Pulse code modulated signal synchronizer  
[NASA-CASE-MSC-12494-1] c 32 N74-20810  
Digital transmitter for data bus communications  
system  
[NASA-CASE-MSC-14558-1] c 32 N75-21486  
Compact-bi-phase pulse coded modulation decoder  
[NASA-CASE-KSC-10834-1] c 33 N76-14371  
Low distortion receiver for bi-level baseband PCM  
waveforms  
[NASA-CASE-MSC-14557-1] c 32 N76-16249  
Differential pulse code modulation  
[NASA-CASE-MSC-12506-1] c 32 N77-12239  
Digital demodulator  
[NASA-CASE-LAR-12659-1] c 33 N82-26570  
Method and apparatus for operating on compacted PCM  
voice data  
[NASA-CASE-KSC-11285-1] c 32 N86-27513

**PULSE COMMUNICATION**  
Phase-shift data transmission system having a  
pseudo-noise SYNC code modulated with the data in a  
single channel Patent  
[NASA-CASE-XNP-00911] c 08 N70-41961  
Differential pulse code modulation  
[NASA-CASE-MSC-12506-1] c 32 N77-12239

- Memory-based frame synchronizer — for digital communication systems  
[NASA-CASE-GSC-12430-1] c 60 N82-16747  
Method and apparatus for operating on compacted PCM voice data  
[NASA-CASE-KSC-11285-1] c 32 N86-27513
- PULSE DURATION**  
Frequency to analog converter Patent  
[NASA-CASE-XNP-07040] c 08 N71-12500  
Pulse amplitude and width detector Patent  
[NASA-CASE-XMF-06519] c 09 N71-12519  
Variable pulse width multiplier Patent  
[NASA-CASE-XLA-02850] c 09 N71-20447  
Pulse width inverter Patent  
[NASA-CASE-MFS-10068] c 10 N71-25139  
Multivibrator circuit with means to prevent false triggering from supply voltage fluctuations Patent  
[NASA-CASE-ARC-10137-1] c 09 N71-28468  
Pulse stretcher for narrow pulses  
[NASA-CASE-MSC-14130-1] c 33 N74-32711
- PULSE DURATION MODULATION**  
Pulse-width modulation multiplier Patent  
[NASA-CASE-XER-09213] c 07 N71-12390  
Variable duration pulse integrator Patent  
[NASA-CASE-XLA-01219] c 10 N71-23084  
Transistor servo system including a unique differential amplifier circuit Patent  
[NASA-CASE-XMF-05195] c 10 N71-24861  
Control apparatus for applying pulses of selectively predetermined duration to a sequence of loads Patent  
[NASA-CASE-XGS-04224] c 10 N71-26418  
Monostable multivibrator with complementary NOR gates Patent  
[NASA-CASE-MSC-13492-1] c 10 N71-28860  
Load current sensor for a series pulse width modulated power supply  
[NASA-CASE-GSC-10656-1] c 09 N72-25249  
Buck/boost regulator  
[NASA-CASE-GSC-12360-1] c 33 N81-19392
- PULSE FREQUENCY MODULATION**  
Apparatus for measuring current flow Patent  
[NASA-CASE-XGS-02439] c 14 N71-19431  
Digitally controlled frequency synthesizer Patent  
[NASA-CASE-XGS-02317] c 09 N71-23525  
Noninterruptible digital counting system Patent  
[NASA-CASE-XNP-09759] c 08 N71-24891  
Frequency modulation demodulator threshold extension device Patent  
[NASA-CASE-MSC-12165-1] c 07 N71-33696  
Versatile LDV burst simulator  
[NASA-CASE-LAR-11859-1] c 35 N79-14349
- PULSE GENERATORS**  
High voltage pulse generator Patent  
[NASA-CASE-MSC-12178-1] c 09 N71-13518  
Flipflop interrogator and bi-polar current driver Patent  
[NASA-CASE-XGS-03058] c 10 N71-19547  
Pulse modulator providing fast rise and fall times Patent  
[NASA-CASE-XMS-04919] c 09 N71-23270  
Passive synchronized spike generator with high input impedance and low output impedance and capacitor power supply Patent  
[NASA-CASE-XGS-03632] c 09 N71-23311  
Resettable monostable pulse generator Patent  
[NASA-CASE-GSC-11139] c 09 N71-27016  
Pulse generating circuit employing switch means on ends of delay line for alternately charging and discharging same Patent  
[NASA-CASE-XNP-00745] c 10 N71-28960  
Pulse coupling circuit  
[NASA-CASE-LEW-10433-1] c 09 N72-22197  
Method and apparatus for nondestructive testing — using high frequency arc discharges  
[NASA-CASE-MFS-21233-1] c 38 N74-15395  
Random pulse generator  
[NASA-CASE-MSC-14131-1] c 33 N75-19515  
Active lamp pulse driver circuit — optical pumping of laser media  
[NASA-CASE-GSC-12566-1] c 33 N83-34189  
Synchronization tracking in pulse position modulation receiver  
[NASA-CASE-NPO-16256-1] c 32 N87-21207
- PULSE HEATING**  
Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NASA-CASE-NPO-15494-1] c 35 N82-25484
- PULSE MODULATION**  
Synchronization tracking in pulse position modulation receiver  
[NASA-CASE-NPO-16256-1] c 32 N87-21207
- PULSE RATE**  
Counter Patent  
[NASA-CASE-XNP-06234] c 10 N71-27137  
Peak holding circuit for extremely narrow pulses  
[NASA-CASE-MSC-14129-1] c 33 N75-18479
- PULSED LASERS**  
Repetitively pulsed, wavelength selective laser Patent  
[NASA-CASE-ERC-10178] c 16 N71-24832  
Dually mode locked Nd:YAG laser  
[NASA-CASE-GSC-11748-1] c 36 N75-19654  
Isotope separation using metallic vapor lasers  
[NASA-CASE-NPO-13550-1] c 36 N77-26477  
Double-beam optical method and apparatus for measuring thermal diffusivity and other molecular dynamic processes in utilizing the transient thermal lens effect  
[NASA-CASE-NPO-14857-1] c 74 N81-17887  
Pulse switching for high energy lasers  
[NASA-CASE-NPO-14556-1] c 33 N82-24418  
Coherently pulsed laser source  
[NASA-CASE-NPO-15111-1] c 36 N82-29589  
Active lamp pulse driver circuit — optical pumping of laser media  
[NASA-CASE-GSC-12566-1] c 33 N83-34189  
Ranging system which compares an object reflected component of a light beam to a reference component of the light beam  
[NASA-CASE-NPO-15865-1] c 74 N85-34629
- PULSED RADIATION**  
Cyclically operable optical shutter  
[NASA-CASE-NPO-10758] c 14 N73-14427  
Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NASA-CASE-NPO-15494-2] c 35 N85-34373  
Acoustic radiation stress measurement  
[NASA-CASE-LAR-13440-1] c 71 N87-21653
- PULSES**  
High pulse rate high resolution optical radar system  
[NASA-CASE-NPO-11426] c 07 N73-26119  
Method and apparatus for characterizing reflected ultrasonic pulses  
[NASA-CASE-LAR-13966-1] c 71 N90-17408
- PULTRUSION**  
Pultrusion die assembly  
[NASA-CASE-LAR-13719-1] c 37 N89-12867
- PUMP SEALS**  
Fluid impervious barrier including liquid metal alloy and method of making same Patent  
[NASA-CASE-XNP-08881] c 17 N71-28747  
Spiral groove seal — for hydraulic rotating shaft  
[NASA-CASE-LEW-10326-3] c 37 N74-10474
- PUMPS**  
Piezoelectric pump Patent  
[NASA-CASE-XNP-05429] c 26 N71-21824  
Vapor liquid separator Patent  
[NASA-CASE-XMF-04042] c 15 N71-23023  
Automatic pump Patent  
[NASA-CASE-XNP-04731] c 15 N71-24042  
Hydraulic transformer Patent  
[NASA-CASE-MFS-20830] c 15 N71-30028  
Firefly pump-metering system  
[NASA-CASE-GSC-10218-1] c 15 N72-21465  
Magnetocaloric pump — for cryogenic fluids  
[NASA-CASE-LEW-11672-1] c 37 N74-27904  
Continuous coal processing method  
[NASA-CASE-NPO-13758-2] c 31 N81-15154  
Gas-to-hydraulic power converter  
[NASA-CASE-MSC-18794-1] c 44 N83-14693  
Variable speed drive  
[NASA-CASE-GSC-12643-1] c 37 N83-26078  
Reciprocating magnetic refrigerator employing tandem porous matrices within a reciprocating displacer  
[NASA-CASE-NPO-16257-1] c 31 N85-29082  
Remotely operable peristaltic pump  
[NASA-CASE-MFS-28059-1] c 37 N86-32738  
Multi-path peristaltic pump  
[NASA-CASE-MSC-20907-1] c 37 N87-18818  
Pumped two-phase heat transfer loop  
[NASA-CASE-MSC-20841-1] c 34 N87-22950  
Pumped two-phase heat transfer loop  
[NASA-CASE-MSC-20841-2] c 34 N88-23958  
Polymeric heat pipe wick  
[NASA-CASE-GSC-13019-1] c 34 N88-29133
- PUNCHED CARDS**  
File card marker Patent  
[NASA-CASE-XLA-02705] c 08 N71-15908  
Device for handling printed circuit cards Patent  
[NASA-CASE-MFS-20453] c 15 N71-29133
- PUNCHES**  
Convoluting device for forming convolutions and the like Patent  
[NASA-CASE-XNP-05297] c 15 N71-23811
- PURGING**  
Techniques for insulating cryogenic fuel containers Patent  
[NASA-CASE-XLA-01967] c 31 N70-42015  
High pressure gas filter system Patent  
[NASA-CASE-MFS-12806] c 14 N71-17588  
Apparatus for purging systems handling toxic, corrosive, noxious and other fluids Patent  
[NASA-CASE-XMS-01905] c 12 N71-21089
- Purge device for thrust engines Patent  
[NASA-CASE-XMS-04826] c 28 N71-28849  
Purging means and method for Xenon arc lamps  
[NASA-CASE-NPO-11978] c 31 N78-17238
- PURIFICATION**  
High pressure helium purifier Patent  
[NASA-CASE-XMF-06888] c 15 N71-24044  
Method and apparatus for distillation of liquids Patent  
[NASA-CASE-NPO-08124] c 15 N71-27184  
Targets for producing high purity I-123  
[NASA-CASE-LEW-10518-3] c 25 N78-27226  
Process for purification of waste water produced by a Kraft process pulp and paper mill  
[NASA-CASE-NPO-13847-2] c 85 N79-17747  
Method of purifying metallurgical grade silicon employing reduced pressure atmospheric control  
[NASA-CASE-NPO-14474-1] c 26 N80-14229  
Membrane consisting of polyquaternary amine ion exchange polymer network interpenetrating the chains of thermoplastic matrix polymer  
[NASA-CASE-NPO-14001-1] c 27 N81-14076  
Electromigration process for the purification of molten silicon during crystal growth  
[NASA-CASE-NPO-14831-1] c 76 N82-30105  
Nebulization reflux concentrator  
[NASA-CASE-LAR-13254-1CU] c 35 N86-29174
- PURITY**  
Process for preparation of dianilinosilanes Patent  
[NASA-CASE-XMF-06409] c 06 N71-23230  
Low defect, high purity crystalline layers grown by selective deposition  
[NASA-CASE-NPO-15813-1] c 76 N85-30922  
Quasi-containerless glass formation method and apparatus  
[NASA-CASE-MFS-28090-1] c 27 N87-21111
- PUSH-PULL AMPLIFIERS**  
Frequency modulated oscillator  
[NASA-CASE-MFS-23181-1] c 33 N77-17351  
Low current linearization of magnetic amplifier for dc transducer  
[NASA-CASE-NPO-14617-1] c 33 N81-24338  
Push-pull converter with energy saving circuit for protecting switching transistors from peak power stress  
[NASA-CASE-NPO-14316-1] c 33 N81-33404
- PUSHING**  
Dual motion valve with single motion input  
[NASA-CASE-MFS-28058-1] c 37 N87-21332
- PYLONS**  
Decoupler pylon: wing/store flutter suppressor  
[NASA-CASE-LAR-12468-1] c 08 N82-32373  
Compression pylon  
[NASA-CASE-LAR-13777-1] c 05 N90-20078
- PYRIDINES**  
Nuclear alkylated pyridine aldehyde polymers and conductive compositions thereof  
[NASA-CASE-NPO-10557] c 27 N78-17214  
Copolymers of vinyl styrylpyridines or vinyl stilbazoles with bismaleimide  
[NASA-CASE-ARC-11429-1-CU] c 27 N86-20560  
Vinyl stilbazoles  
[NASA-CASE-ARC-11429-3CU] c 27 N87-16908  
Structural panels  
[NASA-CASE-ARC-11429-2-CU] c 27 N87-22845
- PYROELECTRICITY**  
Pyroelectric detector arrays  
[NASA-CASE-LAR-12363-1] c 35 N82-31659  
Pyroelectric detector arrays  
[NASA-CASE-LAR-12363-2] c 33 N83-24763
- PYROGEN**  
Molded composite pyrogen igniter for rocket motors — solid propellant ignition  
[NASA-CASE-LAR-12018-1] c 20 N78-24275
- PYROLYSIS**  
Molten salt pyrolysis of latex — synthetic hydrocarbon fuel production using the Guayule shrub  
[NASA-CASE-NPO-14315-1] c 27 N81-17261  
Thermal reactor — liquid silicon production from silane gas  
[NASA-CASE-NPO-14369-1] c 44 N83-10501  
Solar heated oil shale pyrolysis process  
[NASA-CASE-NPO-16392-1] c 25 N86-25428  
Ceramic honeycomb structures and the method thereof  
[NASA-CASE-ARC-11652-1] c 27 N87-23737
- PYROLYTIC GRAPHITE**  
Multilist film cooled pyrolytic graphite rocket nozzle Patent  
[NASA-CASE-XNP-04389] c 28 N71-20942  
Ion sputter textured graphite — anode collector plates in electron tube devices  
[NASA-CASE-LEW-12919-1] c 24 N83-10117  
Ion sputter textured graphite electrode plates  
[NASA-CASE-LEW-12919-2] c 70 N84-28565
- PYROLYTIC MATERIALS**  
Ablation structures Patent  
[NASA-CASE-XMS-01816] c 33 N71-15623

## PYROMETERS

- Ablation sensor  
[NASA-CASE-XLA-01781] c 14 N69-39975  
Noncontact temperature pattern measuring device  
[NASA-CASE-NPO-17024-1-CU] c 35 N88-24943  
Noncontact temperature pattern measuring device  
[NASA-CASE-NPO-17824-1-CU] c 36 N90-17132
- PYROTECHNICS**  
Disconnect unit  
[NASA-CASE-NPO-11330] c 33 N73-26958  
Fully redundant mechanical release actuator  
[NASA-CASE-LAR-13198-1] c 37 N87-23983  
Double swivel toggle release  
[NASA-CASE-MSC-21436-1] c 37 N90-21390
- PYRRONES (TRADEMARK)**  
Method for forming pyrrone molding powders and products of said method  
[NASA-CASE-LAR-10423-1] c 23 N82-29358

## Q

## Q SWITCHED LASERS

- Optically detonated explosive device  
[NASA-CASE-NPO-11743-1] c 28 N74-27425  
Spatial filter for Q-switched lasers  
[NASA-CASE-LEW-12164-1] c 36 N77-32478  
Laser Resonator  
[NASA-CASE-GSC-12565-1] c 36 N84-14509  
Method and circuit for controlling the evolution time interval of a laser output pulse  
[NASA-CASE-LAR-13772-1] c 36 N89-28816  
Method and circuit for shaping laser output pulses  
[NASA-CASE-LAR-14203-1] c 36 N89-28817

## Q VALUES

- Active RC networks  
[NASA-CASE-ARC-10042-2] c 10 N72-11256

## QUADRANTS

- Remote object configuration/orientation determination  
[NASA-CASE-NPO-17436-1-CU] c 35 N89-13764

## QUADRATIC PROGRAMMING

- Quadrature demodulation  
[NASA-CASE-GSC-12137-1] c 33 N78-32338

## QUADRATURES

- Automatic quadrature control and measuring system — using optical coupling circuitry  
[NASA-CASE-MFS-21660-1] c 35 N74-21017  
Modified fast frequency acquisition via adaptive least squares algorithm  
[NASA-CASE-NPO-17845-1-CU] c 61 N90-27341

## QUALITATIVE ANALYSIS

- Ultraviolet atomic emission detector  
[NASA-CASE-HQN-10756-1] c 14 N72-25428  
Analysis of volatile organic compounds — trace amounts of organic volatiles in gas samples  
[NASA-CASE-MSC-14428-1] c 23 N77-17161  
Fluid sample collection and distribution system — qualitative analysis of aqueous samples from several points  
[NASA-CASE-MSC-16841-1] c 34 N79-24285  
Discrete event simulation tool for analysis of qualitative models of continuous processing systems  
[NASA-CASE-MSC-21465-1] c 61 N90-16410

## QUANTITATIVE ANALYSIS

- Fluid phase analyzer Patent  
[NASA-CASE-NPO-10691] c 14 N71-26199  
Apparatus for detecting the amount of material in a resonant cavity container Patent  
[NASA-CASE-XNP-02500] c 18 N71-27397  
Ultraviolet atomic emission detector  
[NASA-CASE-HQN-10756-1] c 14 N72-25428  
Nondispersive gas analyzing method and apparatus wherein radiation is serially passed through a reference and unknown gas  
[NASA-CASE-ARC-10308-1] c 06 N72-31141  
Analysis of volatile organic compounds — trace amounts of organic volatiles in gas samples  
[NASA-CASE-MSC-14428-1] c 23 N77-17161  
Electrophotolysis oxidation system for measurement of organic concentration in water  
[NASA-CASE-MSC-16497-1] c 25 N82-12166  
Method for detecting coliform organisms  
[NASA-CASE-ARC-11322-1] c 51 N83-28849

## QUANTUM THEORY

- III-V photocathode with nitrogen doping for increased quantum efficiency  
[NASA-CASE-NPO-12134-1] c 33 N76-31409

## QUANTUM WELLS

- Growth of III-V films by control of MBE growth front stoichiometry  
[NASA-CASE-NPO-17724-1-CU] c 76 N90-27517

## QUARTZ

- Ultraviolet filter  
[NASA-CASE-XNP-02340] c 23 N69-24332

- Method for attaching a fused-quartz mirror to a conductive metal substrate  
[NASA-CASE-MFS-23405-1] c 26 N77-29260  
Quartz ball valve  
[NASA-CASE-NPO-14473-1] c 37 N80-23654  
Ampoule sealing apparatus and process — for housing a semiconductor growth charge under vacuum  
[NASA-CASE-LAR-12847-1] c 33 N83-16633

## QUARTZ LAMPS

- High intensity heat and light unit Patent  
[NASA-CASE-XLA-00141] c 09 N70-33312  
Light shield and cooling apparatus — high intensity ultraviolet lamp  
[NASA-CASE-LAR-10089-1] c 34 N74-23066

## QUINOXALINES

- Polyphenylquinoxalines containing pendant phenylethynyl and ethynyl groups — for thermoplastic resins  
[NASA-CASE-LAR-12838-1] c 27 N83-34040  
Polyphenylquinoxalines via aromatic nucleophilic displacement  
[NASA-CASE-LAR-13988-1] c 23 N89-11814

## R

## RACKS (FRAMES)

- Test stand system for vacuum chambers  
[NASA-CASE-MFS-21362] c 11 N73-20267  
Thrust-isolating mounting — characteristics of support for loads mounted in spacecraft  
[NASA-CASE-MFS-21680-1] c 18 N74-27397  
Automated syringe sampler — remote sampling of air and water  
[NASA-CASE-LAR-12308-1] c 35 N81-29407  
Laboratory glassware rack for seismic safety  
[NASA-CASE-ARC-11422-1] c 35 N86-20751

## RADAR ANTENNAS

- Radar antenna system for acquisition and tracking Patent  
[NASA-CASE-XMS-09610] c 07 N71-24625  
Variable beamwidth antenna — with multiple beam, variable feed system  
[NASA-CASE-GSC-11862-1] c 32 N76-18295  
Highly efficient antenna system using a corrugated horn and scanning hyperbolic reflector  
[NASA-CASE-NPO-13568-1] c 32 N76-21365  
Baseband signal combiner for large aperture antenna array  
[NASA-CASE-NPO-14641-1] c 32 N81-29308

## RADAR ATTENUATION

- FM/CW radar system  
[NASA-CASE-MFS-22234-1] c 32 N79-10264

## RADAR BEACONS

- Video processor for air traffic control beacon system  
[NASA-CASE-KSC-11155-1] c 04 N86-19304

## RADAR BEAMS

- Method and apparatus for measuring frequency and phase difference  
[NASA-CASE-MSC-20865-1] c 32 N87-18692

## RADAR CROSS SECTIONS

- Method and apparatus for sensor fusion  
[NASA-CASE-MSC-21334-1] c 32 N89-25360  
Almond test body — for microwave anechoic chambers  
[NASA-CASE-LAR-13747-1-CU] c 32 N89-28672

## RADAR DATA

- Charge-coupled device data processor for an airborne imaging radar system  
[NASA-CASE-NPO-13587-1] c 32 N77-32342

## RADAR DETECTION

- Method and apparatus for measuring frequency and phase difference  
[NASA-CASE-MSC-20865-1] c 32 N87-18692

## RADAR ECHOES

- Charge-coupled device data processor for an airborne imaging radar system  
[NASA-CASE-NPO-13587-1] c 32 N77-32342

## RADAR EQUIPMENT

- Method and apparatus for mapping planets  
[NASA-CASE-NPO-11001] c 07 N72-21118  
FM/CW radar system  
[NASA-CASE-MFS-22234-1] c 32 N79-10264

## RADAR IMAGERY

- Method of locating persons in distress — by using radar imagery from radar reflectors  
[NASA-CASE-LAR-11390-1] c 32 N77-21267  
Multibeam single frequency synthetic aperture radar processor for imaging separate range swaths  
[NASA-CASE-NPO-14525-1] c 32 N79-19195  
Radar target for remotely sensing hydrological phenomena  
[NASA-CASE-LAR-12344-1] c 43 N80-18498  
Real-time multiple-look synthetic aperture radar processor for spacecraft applications  
[NASA-CASE-NPO-14054-1] c 32 N82-12297

- Clutter free synthetic aperture radar correlator  
[NASA-CASE-NPO-14035-1] c 32 N83-19968  
Multibeam single frequency synthetic aperture radar processor for imaging separate range swaths  
[NASA-CASE-NPO-14525-2] c 32 N83-31918  
Method and apparatus for contour mapping using synthetic aperture radar  
[NASA-CASE-NPO-15939-1] c 43 N86-19711

## RADAR MEASUREMENT

- Thickness measurement system  
[NASA-CASE-MFS-23721-1] c 31 N79-28370

## RADAR RANGE

- Radar ranging receiver Patent  
[NASA-CASE-XNP-00748] c 07 N70-36911

## RADAR RECEIVERS

- Polarization diversity monopulse tracking receiver Patent  
[NASA-CASE-XGS-03501] c 09 N71-20864

## RADAR RECEPTION

- Radar ranging receiver Patent  
[NASA-CASE-XNP-00748] c 07 N70-36911

## RADAR REFLECTORS

- Inflatable radar reflector unit Patent  
[NASA-CASE-XMS-00893] c 07 N70-40063  
Method of locating persons in distress — by using radar imagery from radar reflectors  
[NASA-CASE-LAR-11390-1] c 32 N77-21267

## RADAR TARGETS

- Radar target for remotely sensing hydrological phenomena  
[NASA-CASE-LAR-12344-1] c 43 N80-18498  
Synthetic aperture radar target simulator  
[NASA-CASE-NPO-15024-1] c 32 N84-27951

## RADAR TRACKING

- Tracking antenna system Patent  
[NASA-CASE-GSC-10553-1] c 07 N71-19854  
Polarization diversity monopulse tracking receiver Patent  
[NASA-CASE-XGS-03501] c 09 N71-20864  
Monopulse tracking system Patent  
[NASA-CASE-XGS-01155] c 10 N71-21483  
Radar calibration sphere  
[NASA-CASE-XLA-11154] c 07 N72-21117  
Echo tracker/range finder for radars and sonars  
[NASA-CASE-NPO-14361-1] c 32 N82-23376

## RADAR TRANSMITTERS

- High pulse rate high resolution optical radar system  
[NASA-CASE-NPO-11426] c 07 N73-26119

## RADIAL DISTRIBUTION

- Ultrasonic transducer with Gaussian radial pressure distribution  
[NASA-CASE-LAR-12967-1] c 35 N84-22932

## RADIAL FLOW

- Radial heat flux transformer  
[NASA-CASE-NPO-10828] c 33 N72-17948  
Axially and radially controllable magnetic bearing  
[NASA-CASE-GSC-11551-1] c 37 N76-18459

## RADIANCE

- Shock-layer radiation measurement  
[NASA-CASE-XAC-02970] c 14 N69-39896

## RADIANT COOLING

- Direct radiation cooling of the collector of linear beam tubes  
[NASA-CASE-XNP-09227] c 15 N69-24319  
Process for applying black coating to metals Patent  
[NASA-CASE-XLA-06199] c 15 N71-24875

- Method for attaching a fused-quartz mirror to a conductive metal substrate  
[NASA-CASE-MFS-23405-1] c 26 N77-29260  
Radiative cooler — spacecraft radiators  
[NASA-CASE-NPO-15465-1] c 34 N84-22903

## Liquid sheet radiator apparatus

- [NASA-CASE-LEW-14295-1] c 31 N89-14348

## RADIANT FLUX DENSITY

- High intensity radiant energy pulse source having means for opening shutter when light flux has reached a desired level  
[NASA-CASE-ARC-10178-1] c 09 N72-17152  
Microwave power transmission beam safety system  
[NASA-CASE-NPO-14224-1] c 33 N80-18287

## RADIANT HEATING

- High intensity heat and light unit Patent  
[NASA-CASE-XLA-00141] c 09 N70-33312  
High temperature heat source Patent  
[NASA-CASE-XLE-00490] c 33 N70-34545  
Radiant heater having formed filaments Patent  
[NASA-CASE-XLE-00387] c 33 N70-34812  
Ceramic insulation for radiant heating environments and method of preparing the same Patent  
[NASA-CASE-MFS-14253] c 33 N71-24858  
Portable linear-focused solar thermal energy collecting system  
[NASA-CASE-NPO-13734-1] c 44 N78-10554  
High thermal power density heat transfer — thermionic converters  
[NASA-CASE-LEW-12950-1] c 34 N82-11399



# RADIATION

Two color horizon sensor  
[NASA-CASE-ERC-10174] c 14 N72-25409  
Irradiance measuring device  
[NASA-CASE-NPO-11493] c 14 N73-12447  
Analog to digital converter for two-dimensional radiant energy array computers  
[NASA-CASE-GSC-11839-3] c 60 N77-32731  
Memory device for two-dimensional radiant energy array computers  
[NASA-CASE-GSC-11839-2] c 60 N78-10709

# RADIATION ABSORPTION

NDIR gas analyzer based on absorption modulation ratios for known and unknown samples  
[NASA-CASE-ARC-10802-1] c 35 N75-30502  
Method for making an aluminum or copper substrate panel for selective absorption of solar energy  
[NASA-CASE-MFS-23518-1] c 44 N79-11469  
Broadband optical radiation detector  
[US-PATENT-4,262,198] c 74 N83-19597

# RADIATION COUNTERS

Particle detection apparatus Patent  
[NASA-CASE-XLA-00135] c 14 N70-33322  
Method and apparatus for determining satellite orientation utilizing spatial energy sources Patent  
[NASA-CASE-XGS-00466] c 21 N70-34297  
Particle beam measurement apparatus using beam kinetic energy to change the heat sensitive resistance of the detection probe Patent  
[NASA-CASE-XLE-00243] c 14 N70-38602  
Baseline stabilization system for ionization detector Patent  
[NASA-CASE-XNP-03128] c 10 N70-41991  
Method of forming thin window drifted silicon charged particle detector Patent  
[NASA-CASE-XLE-00808] c 24 N71-10560  
Dosimeter for high levels of absorbed radiation Patent  
[NASA-CASE-XLA-03645] c 14 N71-20430  
Coincidence apparatus for detecting particles  
[NASA-CASE-XLA-07813] c 14 N72-17328  
Radiation and particle detector and amplifier  
[NASA-CASE-NPO-12128-1] c 14 N73-32317  
Coaxial anode wire for gas radiation counters  
[NASA-CASE-GSC-11492-1] c 35 N74-26949  
Particle parameter analyzing system — x-y plotter circuits and display  
[NASA-CASE-XLE-06094] c 33 N78-17293  
Method and means for helium/hydrogen ratio measurement by alpha scattering  
[NASA-CASE-NPO-14079-1] c 25 N80-20334  
Ion mass spectrometer  
[NASA-CASE-NPO-15423-1] c 35 N84-28016  
Radionuclide counting technique for measuring wind velocity and direction  
[NASA-CASE-LAR-12971-1] c 47 N84-28292

# RADIATION DAMAGE

Semiconductor material and method of making same Patent  
[NASA-CASE-XLE-02798] c 26 N71-23654  
Recovery of radiation damaged solar cells through thermal annealing  
[NASA-CASE-XGS-04047-2] c 03 N72-11062  
Photomultiplier circuit including means for rapidly reducing the sensitivity thereof — and protection from radiation damage  
[NASA-CASE-ARC-10593-1] c 33 N74-27682  
Lithium counterdoped silicon solar cell  
[NASA-CASE-LEW-14177-1] c 44 N86-32875

# RADIATION DETECTORS

Penetrating radiation system for detecting the amount of liquid in a tank Patent  
[NASA-CASE-MSC-12280] c 27 N71-16348  
Light detection instrument Patent  
[NASA-CASE-XGS-05534] c 23 N71-16355  
Attitude sensor for space vehicles Patent  
[NASA-CASE-XLA-00793] c 21 N71-22880  
Extended area semiconductor radiation detectors and a novel readout arrangement Patent  
[NASA-CASE-XGS-03230] c 14 N71-23401  
Nondispersive gas analyzing method and apparatus wherein radiation is serially passed through a reference and unknown gas  
[NASA-CASE-ARC-10308-1] c 06 N72-31141  
Radiant source tracker independent of nonconstant irradiance  
[NASA-CASE-NPO-11686] c 14 N73-25462  
Radiation and particle detector and amplifier  
[NASA-CASE-NPO-12128-1] c 14 N73-32317  
Mossbauer spectrometer radiation detector  
[NASA-CASE-LAR-11155-1] c 35 N74-15091  
High field CdS detector for infrared radiation  
[NASA-CASE-LAR-11027-1] c 35 N74-18088  
Flame detector operable in presence of proton radiation  
[NASA-CASE-MFS-21577-1] c 19 N74-29410

Wide angle sun sensor — consisting of cylinder, insulation and pair of detectors  
[NASA-CASE-NPO-13327-1] c 35 N75-23910  
Detector absorptivity measuring method and apparatus  
[NASA-CASE-LAR-10907-1] c 35 N76-29551  
Wedge immersed thermistor bolometers  
[NASA-CASE-XGS-01245-1] c 35 N79-33449  
X-ray position detector  
[NASA-CASE-NPO-12087-1] c 74 N81-19898  
Broadband optical radiation detector  
[US-PATENT-4,262,198] c 74 N83-19597  
Miniature spectrally selective dosimeter  
[NASA-CASE-LAR-12469-1] c 35 N83-21311  
Method and apparatus for precision control of radiometer  
[NASA-CASE-NPO-15398-1] c 35 N84-22931  
Double photon excitation of high-Rydberg atoms as a long-lived submillimeter detector  
[NASA-CASE-NPO-16372-1] c 72 N86-33127  
Apparatus and procedure to detect a liquid-solid interface during crystal growth in a bridgman furnace  
[NASA-CASE-LAR-13597-1-CU] c 25 N87-23713

# RADIATION DISTRIBUTION

Space simulator Patent  
[NASA-CASE-XNP-00459] c 11 N70-38675

# RADIATION DOSAGE

Dosimeter for high levels of absorbed radiation Patent  
[NASA-CASE-XLA-03645] c 14 N71-20430  
Method for analyzing radiation sensitivity of integrated circuits  
[NASA-CASE-NPO-14350-1] c 33 N80-14332  
Miniature spectrally selective dosimeter  
[NASA-CASE-LAR-12469-1] c 35 N83-21311

# RADIATION EFFECTS

Method of temperature compensating semiconductor strain gages Patent  
[NASA-CASE-XLA-04555-1] c 14 N71-25892

# RADIATION HARDENING

Radiation hardening of MOS devices by boron — for stabilizing gate threshold potential of field effect device  
[NASA-CASE-GSC-11425-1] c 76 N74-20329

# RADIATION HAZARDS

Miniature spectrally selective dosimeter  
[NASA-CASE-LAR-12469-1] c 35 N83-21311

# RADIATION MEASUREMENT

Irradiance measuring device  
[NASA-CASE-NPO-11493] c 14 N73-12447

# RADIATION MEASURING INSTRUMENTS

Scanning aspect sensor employing an apertured disc and a commutator  
[NASA-CASE-XGS-08266] c 14 N69-27432  
Infrared scanner Patent  
[NASA-CASE-XLA-00120] c 21 N70-33181  
Instrument for the quantitative measurement of radiation at multiple wave lengths Patent  
[NASA-CASE-XLE-00011] c 14 N70-41946  
Method for improving the signal-to-noise ratio of the Wheatstone bridge type bolometer Patent  
[NASA-CASE-XLA-02810] c 14 N71-25901  
Irradiance measuring device  
[NASA-CASE-NPO-11493] c 14 N73-12447  
Phototransistor  
[NASA-CASE-MFS-20407] c 09 N73-19235  
Method and apparatus for measuring electromagnetic radiation  
[NASA-CASE-LEW-11159-1] c 14 N73-28488  
Compton scatter attenuation gamma ray spectrometer  
[NASA-CASE-MFS-21441-1] c 14 N73-30392  
Coaxial anode wire for gas radiation counters  
[NASA-CASE-GSC-11492-1] c 35 N74-26949  
Cloud cover sensor  
[NASA-CASE-NPO-14936-1] c 47 N83-32232

# RADIATION MEDICINE

Method of producing I-123 — by bombardment of cesium causing spallation  
[NASA-CASE-LEW-11390-2] c 25 N76-27383

# RADIATION PROTECTION

Method and construction for protecting heat sensitive bodies from thermal radiation and convective heat Patent  
[NASA-CASE-XNP-01310] c 33 N71-28852  
Laser coolant and ultraviolet filter  
[NASA-CASE-MFS-20180] c 16 N72-12440  
Photomultiplier circuit including means for rapidly reducing the sensitivity thereof — and protection from radiation damage  
[NASA-CASE-ARC-10593-1] c 33 N74-27682  
Sun shield  
[NASA-CASE-MSC-20162-1] c 37 N87-17036  
Hazards protection for space suits and spacecraft  
[NASA-CASE-MSC-21366-1] c 54 N89-12206  
Hazards protection for space suits and spacecraft  
[NASA-CASE-MSC-21366-1] c 54 N90-25498

# RADIATION SHIELDING

Ion thruster cathode Patent Application  
[NASA-CASE-LEW-10814-1] c 28 N70-35422  
Ionization vacuum gauge with all but the end of the ion collector shielded Patent  
[NASA-CASE-XLA-07424] c 14 N71-18482  
Sealed cabinetry Patent  
[NASA-CASE-MSC-12168-1] c 09 N71-18600  
Propellant feed isolator Patent  
[NASA-CASE-LEW-10210-1] c 28 N71-26781  
Zero gravity shadow shield aligner  
[NASA-CASE-KSC-10622-1] c 31 N72-21893  
Light shield and cooling apparatus — high intensity ultraviolet lamp  
[NASA-CASE-LAR-10089-1] c 34 N74-23066

# RADIATION SOURCES

Sight switch using an infrared source and sensor Patent  
[NASA-CASE-XMF-03934] c 09 N71-22985  
Apparatus for obtaining isotropic irradiation of a specimen  
[NASA-CASE-MFS-20095] c 24 N72-11595  
Radiant source tracker independent of nonconstant irradiance  
[NASA-CASE-NPO-11686] c 14 N73-25462  
High powered arc electrodes — producing solar simulator radiation  
[NASA-CASE-LEW-11162-1] c 33 N74-12913  
Electric arc light source having undercut recessed anode  
[NASA-CASE-ARC-10266-1] c 33 N75-29318  
Variable magnification variable dispersion glancing incidence imaging x ray spectroscopic telescope  
[NASA-CASE-MFS-28013-3] c 89 N90-27594  
Multispectral variable magnification glancing incidence x ray telescope  
[NASA-CASE-MFS-28013-4] c 89 N90-27595

# RADIATION SPECTRA

Maksutov spectrograph Patent  
[NASA-CASE-XLA-10402] c 14 N71-29041

# RADIATION THERAPY

Cervix-to-rectum measuring device in a radiation applicator for use in the treatment of cervical cancer  
[NASA-CASE-GSC-12081-2] c 52 N82-22875

# RADIATION TOLERANCE

Alkali-metal silicate protective coating  
[NASA-CASE-XGS-04119] c 18 N69-39979  
Method of making a silicon semiconductor device Patent  
[NASA-CASE-XLE-02792] c 26 N71-10607  
Radiation resistant silicon semiconductor devices Patent  
[NASA-CASE-XGS-07801] c 09 N71-12513  
Radiation hardening of MOS devices by boron — for stabilizing gate threshold potential  
[NASA-CASE-GSC-11425-2] c 76 N75-25730  
Method for analyzing radiation sensitivity of integrated circuits  
[NASA-CASE-NPO-14350-1] c 33 N80-14332  
Lithium counterdoped silicon solar cell  
[NASA-CASE-LEW-14177-1] c 44 N86-32875

# RADIATIVE HEAT TRANSFER

Heat flux sensor assembly  
[NASA-CASE-XMS-05909-1] c 14 N69-27459  
Capillary radiator Patent  
[NASA-CASE-XLE-03307] c 33 N71-14035  
Transient heat transfer gauge Patent  
[NASA-CASE-XNP-09802] c 33 N71-15641  
Construction and method of arranging a plurality of ion engines to form a cluster Patent  
[NASA-CASE-XNP-02923] c 28 N71-23081  
Apparatus and method for heating a material in a transparent ampoule — crystal growth  
[NASA-CASE-MFS-25436-1] c 27 N83-36220

# RADIATORS

Self-adjusting multisegment, deployable, natural circulation radiator Patent  
[NASA-CASE-XHQ-03673] c 33 N71-29046

# RADIO ANTENNAS

Parasitic probe antenna Patent  
[NASA-CASE-XKS-09348] c 09 N71-13521  
VHF/UHF parasitic probe antenna Patent  
[NASA-CASE-XKS-09340] c 07 N71-24614  
Unfurlable structure including coiled strips thrust launched upon tension release Patent  
[NASA-CASE-HQN-00937] c 07 N71-28979  
Highly efficient antenna system using a corrugated horn and scanning hyperbolic reflector  
[NASA-CASE-NPO-13568-1] c 32 N76-21365  
Switched steerable multiple beam antenna system  
[NASA-CASE-MSC-20873-1-SB] c 32 N89-11961  
Antenna surface contour control system  
[NASA-CASE-LAR-13798-1] c 32 N89-25363

# RADIO ASTRONOMY

Millimeter wave radiometer for radio astronomy Patent  
[NASA-CASE-XNP-09832] c 30 N71-23723

**RADIO BEACONS**

RF beam center location method and apparatus for power transmission system  
[NASA-CASE-NPO-13821-1] c 44 N78-28594  
Legislated emergency locating transmitters and emergency position indicating radio beacons  
[NASA-CASE-GSC-12892-1] c 32 N89-14374

**RADIO COMMUNICATION**

System for synchronizing synthesizers of communication systems  
[NASA-CASE-GSC-12148-1] c 32 N79-20296  
Antimultipath communication by injecting tone into null in signal spectrum  
[NASA-CASE-NPO-16414-1-CU] c 32 N87-25511

**RADIO CONTROL**

RF controlled solid state switch  
[NASA-CASE-ARC-10136-1] c 09 N72-22202  
Timing control system  
[NASA-CASE-NPO-16882-1-CU] c 33 N88-24863

**RADIO EQUIPMENT**

System for synchronizing synthesizers of communication systems  
[NASA-CASE-GSC-12148-1] c 32 N79-20296

**RADIO FREQUENCIES**

Helical coaxial resonator RF filter  
[NASA-CASE-XGS-02816] c 07 N69-24323  
Automatic gain control system  
[NASA-CASE-XMS-05307] c 09 N69-24330  
Radio frequency shielded enclosure Patent  
[NASA-CASE-XMF-09422] c 07 N71-19436  
Automatic frequency discriminators and control for a phase-lock loop providing frequency preset capabilities Patent  
[NASA-CASE-XMF-08665] c 10 N71-19467  
Sidereal frequency generator Patent  
[NASA-CASE-XGS-02610] c 14 N71-23174  
Radio frequency coaxial high pass filter Patent  
[NASA-CASE-XGS-01418] c 09 N71-23573  
Variable frequency nuclear magnetic resonance spectrometer Patent  
[NASA-CASE-XNP-09830] c 14 N71-26266  
Signal path series step biased multidevice high efficiency amplifier Patent  
[NASA-CASE-GSC-10668-1] c 07 N71-28430  
Method and apparatus for sputtering utilizing an apertured electrode and a pulsed substrate bias  
[NASA-CASE-LEW-10920-1] c 17 N73-24569  
RF-source resistance meters  
[NASA-CASE-NPO-11291-1] c 14 N73-30388  
Multichannel logarithmic RF level detector  
[NASA-CASE-LAR-11021-1] c 32 N76-14321  
Ion and electron detector for use in an ICR spectrometer  
[NASA-CASE-NPO-13479-1] c 35 N77-10492  
Radio frequency arraying method for receivers  
[NASA-CASE-NPO-14328-1] c 32 N80-18253  
Precise RF timing signal distribution to remote stations — fiber optics  
[NASA-CASE-NPO-14749-1] c 32 N81-14186  
Hyperthermia heating apparatus — cancer therapy  
[NASA-CASE-NPO-14549-2] c 52 N82-33996  
High stability buffered phase comparator  
[NASA-CASE-GSC-12645-1] c 33 N84-18454  
Linearized traveling wave amplifier with hard limiter characteristics  
[NASA-CASE-LEW-13981-2] c 33 N86-21742  
Precision tunable resonant microwave cavity  
[NASA-CASE-LEW-13935-1] c 33 N87-21234  
Antimultipath communication by injecting tone into null in signal spectrum  
[NASA-CASE-NPO-16414-1-CU] c 32 N87-25511  
Radio Frequency (RF) strain monitor  
[NASA-CASE-LAR-13705-1] c 39 N88-25011  
Fiber optic sensing system  
[NASA-CASE-LEW-14795-1] c 74 N90-15733

**RADIO FREQUENCY DISCHARGE**  
Electric discharge for treatment of trace contaminants  
[NASA-CASE-ARC-10975-1] c 33 N79-15245

**RADIO FREQUENCY HEATING**  
Gyrotron transmitting tube  
[NASA-CASE-LEW-13429-1] c 33 N83-31952

**RADIO FREQUENCY INTERFERENCE**  
Parametric microwave noise generator Patent  
[NASA-CASE-XER-11019] c 09 N71-23598  
System for interference signal nulling by polarization adjustment  
[NASA-CASE-NPO-13140-1] c 32 N75-24982  
Systems and methods for determining radio frequency interference  
[NASA-CASE-GSC-12150-1] c 32 N79-11265  
Apparatus and method for determining the position of a radiant energy source  
[NASA-CASE-GSC-12147-1] c 32 N81-27341  
Method and apparatus for measuring distance  
[NASA-CASE-MSC-20912-1] c 32 N88-26568

**RADIO FREQUENCY SHIELDING**

Shielded cathode mode bulk effect devices  
[NASA-CASE-ERC-10119] c 26 N72-21701  
Process for making RF shielded cable connector assemblies and the products formed thereby  
[NASA-CASE-GSC-11215-1] c 09 N73-28083

**RADIO INTERFEROMETERS**

System for real-time crustal deformation monitoring  
[NASA-CASE-NPO-14124-1] c 46 N80-14603

**RADIO PROBING**

Method and apparatus for calibrating the ionosphere and application to surveillance of geophysical events  
[NASA-CASE-NPO-15430-1] c 46 N85-21846

**RADIO RECEIVERS**

Multiple input radio receiver Patent  
[NASA-CASE-XLA-00901] c 07 N71-10775  
Optimum predetection diversity receiving system Patent  
[NASA-CASE-XGS-00740] c 07 N71-23098  
Radio frequency arraying method for receivers  
[NASA-CASE-NPO-14328-1] c 32 N80-18253  
Interferometric locating system  
[NASA-CASE-NPO-14173-1] c 04 N80-32359

**RADIO RELAY SYSTEMS**

Satellite communication system Patent  
[NASA-CASE-XNP-02389] c 07 N71-28900  
Systems and methods for determining radio frequency interference  
[NASA-CASE-GSC-12150-1] c 32 N79-11265

**RADIO SIGNALS**

Passive communication satellite Patent  
[NASA-CASE-XLA-00210] c 30 N70-40309  
Millimeter wave radiometer for radio astronomy Patent  
[NASA-CASE-XNP-09832] c 30 N71-23723

**RADIO SOURCES (ASTRONOMY)**

Conical scan tracking system employing a large antenna  
[NASA-CASE-NPO-14009-1] c 32 N79-13214

**RADIO STARS**

Sidereal frequency generator Patent  
[NASA-CASE-XGS-02610] c 14 N71-23174

**RADIO TELEMETRY**

Digital telemetry system Patent  
[NASA-CASE-XGS-01812] c 07 N71-23001

**RADIO TELESCOPES**

Antenna grout replacement system  
[NASA-CASE-NPO-15202-1] c 27 N83-34043

**RADIO TRANSMITTERS**

Vehicle locating system utilizing AM broadcasting station carriers  
[NASA-CASE-NPO-13217-1] c 32 N75-26194  
Aircraft-mounted crash-activated transmitter device  
[NASA-CASE-MFS-16609-3] c 03 N76-32140  
Low-frequency radio navigation system  
[NASA-CASE-NPO-15264-1] c 04 N84-27713  
Antimultipath communication by injecting tone into null in signal spectrum  
[NASA-CASE-NPO-16414-1-CU] c 32 N87-25511

**RADIO WAVES**

Shielded cathode mode bulk effect devices  
[NASA-CASE-ERC-10119] c 26 N72-21701

**RADIOACTIVE ISOTOPIES**

Thermally cascaded thermoelectric generator  
[NASA-CASE-NPO-10753] c 03 N72-26031  
Protected isotope heat source — for atmospheric reentry protection and heat transmission to spacecraft  
[NASA-CASE-LEW-11227-1] c 73 N75-30876  
Radionuclide counting technique for measuring wind velocity and direction  
[NASA-CASE-LAR-12971-1] c 47 N84-28292

**RADIOBIOLOGY**

Production of high purity I-123  
[NASA-CASE-LEW-10518-1] c 24 N72-33681

**RADIOGRAPHY**

Determination of spot weld quality Patent  
[NASA-CASE-XNP-02588] c 15 N71-18613  
Method and system for in vivo measurement of bone tissue using a two level energy source  
[NASA-CASE-MSC-14276-1] c 52 N77-14737  
Medical clip  
[NASA-CASE-LAR-12650-1] c 52 N84-28388  
Process of making medical clip  
[NASA-CASE-LAR-12650-2] c 52 N84-28389  
X-ray determination of parts alignment  
[NASA-CASE-MSC-20418-1] c 74 N86-20126  
Method of radiographic inspection of wooden members  
[NASA-CASE-LAR-13724-1] c 38 N90-23756

**RADIOLOGY**

Hyperthermia heating apparatus — cancer therapy  
[NASA-CASE-NPO-14549-2] c 52 N82-33996

**RADIOLYSIS**

Process for making anhydrous metal halides  
[NASA-CASE-LEW-11860-1] c 37 N76-18458

**RADIOMETERS**

Compensating radiometer  
[NASA-CASE-XLA-04556] c 14 N69-27484  
Conically shaped cavity radiometer with a dual purpose cone winding Patent  
[NASA-CASE-XNP-09701] c 14 N71-26475  
Black body cavity radiometer Patent  
[NASA-CASE-NPO-10810] c 14 N71-27323  
Thermoelectric radiometer utilizing polymer film  
[NASA-CASE-ARC-10138-1] c 14 N72-24477  
Two color horizon sensor  
[NASA-CASE-ERC-10174] c 14 N72-25409  
Clear air turbulence detector  
[NASA-CASE-ERC-10081] c 14 N72-28437  
Method and apparatus for measuring solar activity and atmospheric radiation effects  
[NASA-CASE-ERC-10276] c 14 N73-26432  
Steady state thermal radiometers  
[NASA-CASE-MFS-21108-1] c 34 N74-27861  
Method and apparatus for precision control of radiometer  
[NASA-CASE-NPO-15398-1] c 35 N84-22931

**RADIOSONDES**

Induction powered biological radiosonde  
[NASA-CASE-ARC-11120-1] c 52 N80-18691

**RAIN**

Precipitation detector Patent  
[NASA-CASE-XLA-02619] c 10 N71-26334  
Environmental fog/rain visual display system for aircraft simulators  
[NASA-CASE-ARC-11158-1] c 09 N82-24212

**RAMJET ENGINES**

Telescoping-spike supersonic inlet for aircraft engines Patent  
[NASA-CASE-XLE-00005] c 28 N70-39899  
Hypersonic airbreathing missile  
[NASA-CASE-LAR-12264-1] c 15 N78-32168

**RAMPS (STRUCTURES)**

Automated multi-level vehicle parking system  
[NASA-CASE-NPO-13058-1] c 37 N77-22480

**RANDOM ACCESS MEMORY**

Memory-based frame synchronizer — for digital communication systems  
[NASA-CASE-GSC-12430-1] c 60 N82-16747  
Memory-based parallel data output controller  
[NASA-CASE-GSC-12447-2] c 60 N84-28491  
Hybrid analog-digital associative neural network  
[NASA-CASE-NPO-17058-1-CU] c 62 N87-25803  
Self-checking on-line testable static RAM  
[NASA-CASE-NPO-17939-1-CU] c 60 N90-26518  
High speed magneto-resistive random access memory  
[NASA-CASE-NPO-17954-1-CU] c 60 N90-26519

**RANDOM LOADS**

Fatigue testing device Patent  
[NASA-CASE-XLA-02131] c 32 N70-42003

**RANDOM NOISE**

Noise limiter Patent  
[NASA-CASE-NPO-10169] c 10 N71-24844  
Digital servo control of random sound test excitation — in reverberant acoustic chamber  
[NASA-CASE-NPO-11623-1] c 71 N74-31148  
Random pulse generator  
[NASA-CASE-MSC-14131-1] c 33 N75-19515  
Pseudo noise code and data transmission method and apparatus  
[NASA-CASE-GSC-12017-1] c 32 N77-30308  
Low phase noise oscillator using two parallel connected amplifiers  
[NASA-CASE-GSC-13018-1] c 33 N87-21232

**RANDOM NUMBERS**

Long period pseudo random number sequence generator  
[NASA-CASE-NPO-17241-1-CU] c 33 N90-23636

**RANGE (EXTREMES)**

Logarithmic circuit with wide dynamic range  
[NASA-CASE-GSC-12145-1] c 33 N78-32339

**RANGE AND RANGE RATE TRACKING**

Range and range rate system  
[NASA-CASE-MSC-20867-1] c 36 N88-24958

**RANGE FINDERS**

Closed loop ranging system Patent  
[NASA-CASE-XNP-01501] c 21 N70-41930  
Digital demodulator-correlator  
[NASA-CASE-NPO-13982-1] c 32 N79-14267  
Echo tracker/range finder for radars and sonars  
[NASA-CASE-NPO-14361-1] c 32 N82-23376  
Ranging system which compares an object reflected component of a light beam to a reference component of the light beam  
[NASA-CASE-NPO-15865-1] c 74 N85-34629  
Optical distance measuring instrument  
[NASA-CASE-GSC-12761-1] c 74 N86-32266

**RANGEFINDING**

Dynamic Doppler simulator Patent  
[NASA-CASE-XMS-05454-1] c 07 N71-12391

- Ranging system Patent  
[NASA-CASE-NPO-10066] c 09 N71-18598
- Binary coded sequential acquisition ranging system  
[NASA-CASE-NPO-11194] c 08 N72-25209
- Code regenerative clean-up loop transponder for a mu-type ranging system  
[NASA-CASE-NPO-11707] c 07 N73-25161
- Orbital and entry tracking accessory for globes — to provide range requirements for reentry vehicles to any landing site  
[NASA-CASE-LAR-10626-1] c 19 N74-21015
- RARE EARTH COMPOUNDS**
- Didymium hydrate additive to nickel hydroxide electrodes Patent  
[NASA-CASE-XGS-03505] c 03 N71-10608
- High modulus rare earth and beryllium containing silicate glass compositions — for glass reinforcing fibers  
[NASA-CASE-HQN-10595-1] c 27 N82-29455
- RARE GASES**
- Inert gas metallic vapor laser  
[NASA-CASE-NPO-13449-1] c 36 N75-32441
- Fluidized bed desulfurization  
[NASA-CASE-NPO-15924-1] c 25 N85-35253
- Low noise lead screw positioner  
[NASA-CASE-NPO-15617-1] c 35 N87-21304
- RAREFIED GASES**
- Magnetically controlled plasma accelerator Patent  
[NASA-CASE-XLA-00327] c 25 N71-29184
- RASTER SCANNING**
- Rotating-unbalanced-mass devices and methods for scanning balloon-borne-experiments, free-flying spacecraft, and space shuttle/space station attached experiments  
[NASA-CASE-MFS-28425-1] c 35 N90-26304
- RATES (PER TIME)**
- Rate data encoder  
[NASA-CASE-LAR-10128-1] c 08 N73-20217
- Ranging system which compares an object reflected component of a light beam to a reference component of the light beam  
[NASA-CASE-NPO-15865-1] c 74 N85-34629
- RC CIRCUITS**
- Pulse counting circuit which simultaneously indicates the occurrence of the nth pulse Patent  
[NASA-CASE-XMF-00906] c 09 N70-41655
- RC rate generator for slow speed measurement Patent  
[NASA-CASE-XMF-02966] c 10 N71-24863
- Transient augmentation circuit for pulse amplifiers Patent  
[NASA-CASE-XNP-01068] c 10 N71-28739
- Active RC networks  
[NASA-CASE-ARC-10042-2] c 10 N72-11256
- RC networks and amplifiers employing the same  
[NASA-CASE-XAC-05462-2] c 10 N72-17171
- Active RC networks  
[NASA-CASE-ARC-10020] c 10 N72-17172
- Multiloop RC active filter apparatus having low parameter sensitivity with low amplifier gain  
[NASA-CASE-ARC-10192] c 09 N72-21245
- Temperature control system with a pulse width modulated bridge  
[NASA-CASE-NPO-11304] c 14 N73-26430
- Diode-quad bridge circuit means  
[NASA-CASE-ARC-10364-3] c 33 N75-19520
- REACTION BONDING**
- Fiber reinforced ceramic material  
[NASA-CASE-LEW-14392-2] c 27 N89-29538
- REACTION CONTROL**
- Voice operated controller Patent  
[NASA-CASE-XLA-04063] c 31 N71-33160
- REACTION KINETICS**
- Synthesis of polyformals  
[NASA-CASE-ARC-11244-1] c 23 N82-16174
- REACTION PRODUCTS**
- Process for crosslinking and extending conjugated diene-containing polymers  
[NASA-CASE-LAR-13452-1] c 27 N87-22848
- REACTION TIME**
- Pseudonoise code tracking loop  
[NASA-CASE-MS-18035-1] c 32 N81-15179
- REACTION WHEELS**
- Reaction wheel scanner Patent  
[NASA-CASE-XGS-02629] c 14 N71-21082
- Gravity gradient attitude control system Patent  
[NASA-CASE-GSC-10555-1] c 21 N71-27324
- Emitted vibration measurement device and method  
[NASA-CASE-MFS-25981-1] c 35 N87-14670
- REACTIVITY**
- Gaseous control system for nuclear reactors  
[NASA-CASE-XLE-04599] c 22 N72-20597
- REACTOR CORES**
- Uninsulated in-core thermionic diode  
[NASA-CASE-NPO-10542] c 09 N72-27228
- REACTOR DESIGN**
- Non-equilibrium radiation nuclear reactor  
[NASA-CASE-HQN-10841-1] c 73 N78-19920
- Thermal reactor — liquid silicon production from silane gas  
[NASA-CASE-NPO-14369-1] c 44 N83-10501
- REACTOR MATERIALS**
- Zirconium modified nickel-copper alloy  
[NASA-CASE-LEW-12245-1] c 26 N77-20201
- REACTOR PHYSICS**
- Non-equilibrium radiation nuclear reactor  
[NASA-CASE-HQN-10841-1] c 73 N78-19920
- READ-ONLY MEMORY DEVICES**
- Method and apparatus for operating on companded PCM voice data  
[NASA-CASE-KSC-11285-1] c 32 N86-27513
- READERS**
- Braille reading system  
[NASA-CASE-LAR-13306-1] c 82 N87-29372
- READOUT**
- Flow angle sensor and read out system Patent  
[NASA-CASE-XLE-04503] c 14 N71-24864
- Plural position switch status and operativeness checker Patent  
[NASA-CASE-XLA-08799] c 10 N71-27272
- Magneto-optic detection system with noise cancellation  
[NASA-CASE-NPO-11954-1] c 35 N78-29421
- REAGENTS**
- Method of dispensing reagent chemicals in space  
[NASA-CASE-LAR-13607-1-CU] c 29 N88-29048
- REAL TIME OPERATION**
- Respiratory analysis system and method  
[NASA-CASE-MS-13436-1] c 05 N73-32015
- Real time moving scene holographic camera system  
[NASA-CASE-MFS-21087-1] c 35 N74-17153
- Real time, large volume, moving scene holographic camera system  
[NASA-CASE-MFS-22537-1] c 35 N75-27328
- Carbon monoxide monitor — using real time operation  
[NASA-CASE-MFS-22060-1] c 35 N75-29380
- Real time analysis of voiced sounds  
[NASA-CASE-NPO-13465-1] c 32 N76-31372
- Real time reflectometer — measurement of specular reflectance  
[NASA-CASE-MFS-23118-1] c 35 N77-31465
- Contour detector and data acquisition system for the left ventricular outline  
[NASA-CASE-ARC-10985-1] c 52 N79-10724
- Azimuth correlator for real-time synthetic aperture radar image processing  
[NASA-CASE-NPO-14019-1] c 32 N79-14268
- System for real-time crustal deformation monitoring  
[NASA-CASE-NPO-14124-1] c 46 N80-14603
- X-ray position detector  
[NASA-CASE-NPO-12087-1] c 74 N81-19898
- Real-time multiple-look synthetic aperture radar processor for spacecraft applications  
[NASA-CASE-NPO-14054-1] c 32 N82-12297
- Pipelined digital SAR azimuth correlator using hybrid FFT-transversal filter  
[NASA-CASE-NPO-15519-1] c 32 N84-34651
- Optical stereo video signal processor  
[NASA-CASE-MFS-25752-1] c 74 N86-21348
- Real-time garbage collection for list processing  
[NASA-CASE-MS-20964-1] c 60 N87-14863
- Real-time optical multiple object recognition and tracking system and method  
[NASA-CASE-NPO-17139-1-CU] c 74 N88-25301
- Real-time image difference detection using a polarization rotation spatial light modulator  
[NASA-CASE-NPO-17144-1-CU] c 74 N88-25305
- Remotely controllable real-time optical processor  
[NASA-CASE-NPO-16750-1-CU] c 74 N89-14078
- Airplane takeoff and landing performance monitoring system  
[NASA-CASE-LAR-13734-1-CU] c 09 N90-20096
- Methods and apparatus for providing real-time control of a gaseous propellant rocket propulsion system  
[NASA-CASE-MS-21542-1] c 20 N90-26073
- Special purpose parallel computer architecture for real-time control and simulation in robotic applications  
[NASA-CASE-NPO-17629-1-CU] c 60 N90-27268
- Modified fast frequency acquisition via adaptive least squares algorithm  
[NASA-CASE-NPO-17845-1-CU] c 61 N90-27341
- Neural network with dynamically adaptable neurons  
[NASA-CASE-NPO-17803-1-CU] c 62 N90-27385
- REATTACHED FLOW**
- Method and apparatus for detecting laminar flow separation and reattachment  
[NASA-CASE-LAR-13952-1-SB] c 34 N90-19534
- REBREATHING**
- Portable breathing system — a breathing apparatus using a rebreathing system of heat exchangers for carbon dioxide removal  
[NASA-CASE-MS-16182-1] c 54 N80-10799
- RECEIVERS**
- System for improving signal-to-noise ratio of a communication signal Patent Application  
[NASA-CASE-MS-12259-1] c 07 N70-12616
- Receiver with an improved phase lock loop in a multichannel telemetry system with suppressed carrier  
[NASA-CASE-NPO-11593-1] c 07 N73-28012
- Automatic carrier acquisition system  
[NASA-CASE-NPO-11628-1] c 07 N73-30113
- Coherent receiver employing nonlinear coherence detection for carrier tracking  
[NASA-CASE-NPO-11921-1] c 32 N74-30523
- Low distortion receiver for bi-level baseband PCM waveforms  
[NASA-CASE-MS-14557-1] c 32 N76-16249
- Wideband heterodyne receiver for laser communication system  
[NASA-CASE-GSC-12053-1] c 32 N77-28346
- Self-calibrating threshold detector  
[NASA-CASE-MS-16370-1] c 35 N81-19427
- Method and apparatus for receiving and tracking phase modulated signals  
[NASA-CASE-MS-16170-2] c 32 N84-27952
- Method of measuring sea surface water temperature with a satellite including wideband passive synthetic-aperture multichannel receiver  
[NASA-CASE-NPO-15651-1] c 43 N85-21723
- High dynamic global positioning system receiver  
[NASA-CASE-NPO-16171-1-CU] c 04 N86-27270
- Efficient detection and signal parameter estimation with application to high dynamic GPS receiver  
[NASA-CASE-NPO-17820-1-CU] c 04 N90-18379
- Miniaturization of flight deflection measurement system  
[NASA-CASE-LAR-13628-1] c 35 N90-23707
- RECIPROCATING**
- Reciprocating magnetic refrigerator employing tandem porous matrices within a reciprocating displacer  
[NASA-CASE-NPO-16257-1] c 31 N85-29082
- Reciprocating linear motor  
[NASA-CASE-GSC-12773-2] c 33 N87-23904
- RECOMBINATION REACTIONS**
- Oxygen recombination in individual pressure vessel nickel-hydrogen batteries  
[NASA-CASE-LEW-13822-1] c 44 N86-25874
- Isotope exchange in oxide-containing catalyst  
[NASA-CASE-LAR-13542-2-SB] c 25 N90-20154
- RECONSTRUCTION**
- Method and means for recording and reconstructing holograms without use of a reference beam Patent  
[NASA-CASE-ERC-10020] c 16 N71-26154
- RECORDING HEADS**
- Electromagnetic transducer recording head having a laminated core section and tapered gap  
[NASA-CASE-NPO-10711-1] c 35 N77-21392
- RECORDING INSTRUMENTS**
- Automatic force measuring system Patent  
[NASA-CASE-XLA-02605] c 14 N71-10773
- Blood pressure measuring system for separating and separately recording dc signal and an ac signal Patent  
[NASA-CASE-XMS-06061] c 05 N71-23317
- Helical recorder arrangement for multiple channel recording on both sides of the tape  
[NASA-CASE-GSC-10614-1] c 09 N72-11224
- Thermomagnetic recording and magneto-optic playback system having constant intensity laser beam control  
[NASA-CASE-NPO-11317-2] c 36 N74-13205
- Holography utilizing surface plasmon resonances  
[NASA-CASE-MFS-22040-1] c 35 N74-26946
- Measuring probe position recorder  
[NASA-CASE-LAR-10806-1] c 35 N74-32877
- RECOVERABILITY**
- Ejectable underwater sound source recovery assembly  
[NASA-CASE-LAR-10595-1] c 35 N74-16135
- RECOVERABLE LAUNCH VEHICLES**
- Recoverable rocket vehicle Patent  
[NASA-CASE-XMF-00389] c 31 N70-34176
- Oribter/launch system  
[NASA-CASE-LAR-12250-1] c 14 N81-26161
- RECOVERABLE SPACECRAFT**
- Space capsule ejection assembly Patent  
[NASA-CASE-XMF-03169] c 31 N71-15675
- RECOVERY PARACHUTES**
- Vehicle parachute and equipment jettison system Patent  
[NASA-CASE-XLA-00195] c 02 N70-38009
- Vortex breach high pressure gas generator  
[NASA-CASE-LAR-10549-1] c 31 N73-13898
- RECTANGULAR PANELS**
- Stacked solar cell arrays  
[NASA-CASE-NPO-11771] c 03 N73-20040

Composite sandwich lattice structure  
[NASA-CASE-LAR-11898-1] c 24 N78-10214

**RECTIFIERS**  
Thin window, drifted silicon, charged particle detector  
[NASA-CASE-XLE-10529] c 14 N69-23191  
Power control circuit  
[NASA-CASE-XNP-02713] c 10 N69-39888  
Precision rectifier with FET switching means Patent  
[NASA-CASE-ARC-10101-1] c 09 N71-33109  
SCR lamp driver  
[NASA-CASE-GSC-10221-1] c 09 N72-23171  
A dc to ac to dc converter having transistor synchronous rectifiers  
[NASA-CASE-GSC-11126-1] c 09 N72-25253  
Elimination of current spikes in buck power converters  
[NASA-CASE-NPO-14505-1] c 33 N81-19393

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Cervix-to-rectum measuring device in a radiation applicator for use in the treatment of cervical cancer  
[NASA-CASE-GSC-12081-2] c 52 N82-22875

**REDOX CELLS**  
Catalyst surfaces for the chromous/chromic redox couple  
[NASA-CASE-LEW-13148-2] c 44 N81-29524  
Zirconium carbide as an electrocatalyst for the chromous-chromic redox couple  
[NASA-CASE-LEW-13246-1] c 44 N83-27344  
Chromium electrodes for REDOX cells  
[NASA-CASE-LEW-13653-1] c 44 N84-28205  
Negative electrode catalyst for the iron chromium redox energy storage system  
[NASA-CASE-LEW-14028-1] c 44 N86-19721  
Method and apparatus for rebalancing a REDOX flow cell system  
[NASA-CASE-LEW-14127-1] c 33 N86-20680

**REDUCED GRAVITY**  
Reduced gravity liquid configuration simulator  
[NASA-CASE-XLE-02624] c 12 N69-39988  
Mass measuring system Patent  
[NASA-CASE-XMS-03371] c 05 N70-42000  
Reduced gravity simulator Patent  
[NASA-CASE-XLA-01787] c 11 N71-16028  
Restraint system for ergometer  
[NASA-CASE-MFS-21046-1] c 14 N73-27377  
Method of forming frozen spheres in a force-free drop tower  
[NASA-CASE-NPO-14845-1] c 27 N82-28442  
Spray applicator for spraying coatings and other fluids in space  
[NASA-CASE-MSC-18852-1] c 37 N85-29283  
Improved method and apparatus for waste collection and storage  
[NASA-CASE-MSC-21025-1] c 31 N87-25495  
Gas particle radiator  
[NASA-CASE-LEW-14297-1] c 35 N89-12048  
Tank gauging apparatus and method  
[NASA-CASE-MSC-21059-1] c 35 N89-12843  
Don/doff support stand for use with rear entry space suits  
[NASA-CASE-MSC-21364-1] c 54 N89-13889  
Spiral vane bioreactor  
[NASA-CASE-MSC-21361-1] c 51 N89-25557  
Hollow fiber clinostat: Technical abstract  
[NASA-CASE-MFS-28370-1] c 35 N89-28793  
Apparatus for mixing solutions in low gravity environments  
[NASA-CASE-MFS-26047-1] c 29 N90-21209  
Acoustic convective system  
[NASA-CASE-NPO-17278-1-CU] c 31 N90-21215

**REDUCTION**  
Method and apparatus for reducing speckle  
[NASA-CASE-LAR-13771-1] c 36 N89-14428

**REDUCTION (CHEMISTRY)**  
Production of metal powders  
[NASA-CASE-XLE-06461] c 17 N72-22530  
Process for making anhydrous metal halides  
[NASA-CASE-LEW-11860-1] c 37 N76-18458  
Curable liquid hydrocarbon prepolymers containing hydroxyl groups and process for producing same  
[NASA-CASE-NPO-13137-1] c 27 N80-32514  
Hydrodesulfurization of chlorinated coal  
[NASA-CASE-NPO-15304-1] c 25 N83-31743

**REDUNDANCY**  
Reconfiguring redundancy management  
[NASA-CASE-MSC-18498-1] c 60 N82-29013  
Method and apparatus for configuration control of redundant robots  
[NASA-CASE-NPO-17801-1-CU] c 37 N90-27110

**REDUNDANT COMPONENTS**  
Redundant memory organization Patent  
[NASA-CASE-GSC-10564] c 10 N71-29135  
Redundant disc  
[NASA-CASE-LEW-12496-1] c 07 N78-33101  
Redundant motor drive system  
[NASA-CASE-MFS-23777-1] c 37 N80-32716

Redundant operation of counter modules  
[NASA-CASE-NPO-14162-1] c 60 N81-15706

**REELS**  
Method and apparatus for measuring web material wound on a reel  
[NASA-CASE-GSC-11902-1] c 38 N77-17495  
Rotatable electric cable connecting system  
[NASA-CASE-GSC-12899-1] c 33 N86-20669

**REENTRY COMMUNICATION**  
Electrostatic plasma modulator for space vehicle re-entry communication Patent  
[NASA-CASE-XLA-01400] c 07 N70-41331  
Means for communicating through a layer of ionized gases Patent  
[NASA-CASE-XLA-01127] c 07 N70-41372  
Reentry communication by material addition Patent  
[NASA-CASE-XLA-01552] c 07 N71-11284

**REENTRY SHIELDING**  
Transpirationally cooled heat ablation system Patent  
[NASA-CASE-XMS-02677] c 31 N70-42075  
Method and apparatus for making a heat insulating and ablative structure Patent  
[NASA-CASE-XMS-02009] c 33 N71-20834  
Stand-off type ablative heat shield  
[NASA-CASE-MSC-12143-1] c 33 N72-17947  
Protected isotope heat source — for atmospheric reentry protection and heat transmission to spacecraft  
[NASA-CASE-LEW-11227-1] c 73 N75-30876  
Fibrous refractory composite insulation — shielding reusable spacecraft  
[NASA-CASE-ARC-11169-1] c 24 N79-24062  
Adjustable high emittance gap filler — reentry shielding for space shuttle vehicles  
[NASA-CASE-ARC-11310-1] c 27 N82-24339  
Method for repair of thin glass coatings — on space shuttle orbiter tiles  
[NASA-CASE-KSC-11087-1] c 27 N82-33520  
Ceramic-ceramic shell tile thermal protection system and method thereof  
[NASA-CASE-ARC-11641-1] c 24 N88-18628

**REENTRY TRAJECTORIES**  
Hypersonic reentry vehicle Patent  
[NASA-CASE-XMS-04142] c 31 N70-41631

**REENTRY VEHICLES**  
Reentry vehicle leading edge Patent  
[NASA-CASE-XLA-00165] c 31 N70-33242  
Variable-geometry winged reentry vehicle Patent  
[NASA-CASE-XLA-00241] c 31 N70-37986  
Telespectrograph Patent  
[NASA-CASE-XLA-03273] c 14 N71-18699  
Ablation sensor Patent  
[NASA-CASE-XLA-01791] c 14 N71-22991  
Ring wing tension vehicle Patent  
[NASA-CASE-XLA-04901] c 31 N71-24315  
Ferry system  
[NASA-CASE-LAR-10574-1] c 11 N73-13257  
Vortex breach high pressure gas generator  
[NASA-CASE-LAR-10549-1] c 31 N73-13898  
Three-component ceramic coating for silica insulation  
[NASA-CASE-MSC-14270-2] c 27 N76-23426  
Earth-to-orbit vehicle providing a reusable orbital stage  
[NASA-CASE-LAR-13486-1] c 16 N90-22584

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Automatic frequency control loop including synchronous switching circuits  
[NASA-CASE-KSC-10393] c 09 N72-21247  
Magnetic heading reference  
[NASA-CASE-LAR-11387-2] c 04 N77-19056

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Helium refining by superfluidity Patent  
[NASA-CASE-XNP-00733] c 06 N70-34946

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Optical characteristics measuring apparatus Patent  
[NASA-CASE-XNP-08840] c 23 N71-16365  
Gravimeter Patent  
[NASA-CASE-XMF-05844] c 14 N71-17587  
Optical mirror apparatus Patent  
[NASA-CASE-ERC-10001] c 23 N71-24868  
Portable reflectance spectrometer  
[NASA-CASE-NPO-13556-1] c 35 N84-33766  
Diffusely reflecting paints including polytetrafluoroethylene and method of manufacture  
[NASA-CASE-GSC-12883-1] c 27 N85-29044  
Wide-angle flat field telescope  
[NASA-CASE-GSC-12825-1] c 74 N86-28732  
Method and apparatus for characterizing reflected ultrasonic pulses  
[NASA-CASE-LAR-13968-1] c 71 N90-17408  
Doppler radar with multiphase modulation of transmitted and reflected signal  
[NASA-CASE-MSC-18808-1] c 32 N90-20280

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Device and method for determining X ray reflection efficiency of optical surfaces  
[NASA-CASE-MFS-20243] c 23 N73-13662

Clear air turbulence detector  
[NASA-CASE-MFS-21244-1] c 36 N75-15028  
Reflected-wave maser — low noise amplifier  
[NASA-CASE-NPO-13490-1] c 36 N76-31512

**REFLECTING TELESCOPES**  
Anastigmatic three-mirror telescope  
[NASA-CASE-MFS-23675-1] c 89 N79-10969  
Wide-angle flat field telescope  
[NASA-CASE-GSC-12825-1] c 74 N86-28732

**REFLECTION**  
Synthesis of zinc titanate pigment and coatings containing the same  
[NASA-CASE-MFS-13532] c 18 N72-17532  
Method and apparatus for compensating reflection losses in a path length modulated absorption-absorption trace gas detector — for determining density of gas  
[NASA-CASE-ARC-10631-1] c 74 N76-20958  
Ranging system which compares an object reflected component of a light beam to a reference component of the light beam  
[NASA-CASE-NPO-15885-1] c 74 N85-34629

**REFLECTOMETERS**  
Ellipsoidal mirror reflectometer including means for averaging the radiation reflected from the sample Patent  
[NASA-CASE-XGS-05291] c 23 N71-16341  
Real time reflectometer — measurement of specular reflectance  
[NASA-CASE-MFS-23118-1] c 35 N77-31465  
Coal-shale interface detection  
[NASA-CASE-MFS-23720-3] c 43 N79-25443  
Visible and infrared polarization ratio spectrophotometer  
[NASA-CASE-LAR-12285-1] c 35 N80-28887

**REFLECTOR ANTENNAS**  
Focal axis resolver for offset reflector antennas  
[NASA-CASE-GSC-12630-1] c 33 N83-36355

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[NASA-CASE-XLA-00138] c 31 N70-37981  
Self-erecting reflector Patent  
[NASA-CASE-XGS-09190] c 31 N71-16102  
Spectroscope equipment using a slender cylindrical reflector as a substitute for a slit Patent  
[NASA-CASE-XGS-08269] c 23 N71-26206  
Conical reflector antenna  
[NASA-CASE-NPO-10303] c 07 N72-22127  
Target acquisition antenna  
[NASA-CASE-GSC-10064-1] c 10 N72-22235  
Multi-purpose antenna employing dish reflector with plural coaxial horn feeds  
[NASA-CASE-NPO-11264] c 07 N72-25174  
Multiple reflection conical microwave antenna  
[NASA-CASE-NPO-11661] c 07 N73-14130  
Non-tracking solar energy collector system  
[NASA-CASE-NPO-13813-1] c 44 N78-31526  
Solar cell having improved back surface reflector  
[NASA-CASE-LEW-13620-1] c 44 N83-13579  
Acoustic suspension system  
[NASA-CASE-NPO-15435-1] c 71 N83-36846  
Optical system with reflective baffles  
[NASA-CASE-ARC-11502-1] c 74 N86-20125  
Ultrasonic angle beam standard reflector — ultrasonic nondestructive inspection  
[NASA-CASE-LAR-13153-1] c 71 N88-21276  
Compensation for primary reflector wavefront error  
[NASA-CASE-NPO-16869-1CU] c 74 N86-33138  
Welding torch with arc light reflector  
[NASA-CASE-MFS-28134-1] c 74 N87-17493  
Self-clamping arc light reflector for welding torch  
[NASA-CASE-MFS-28207-1] c 74 N87-25843  
Reflection oscillators employing series resonant crystals  
[NASA-CASE-GSC-13173-1] c 33 N90-23835  
New core design for use with precision composite reflectors  
[NASA-CASE-NPO-17858-1-CU] c 24 N90-26880

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[NASA-CASE-GSC-12088-1] c 74 N78-13874  
Chromatically corrected virtual image visual display — reducing eye strain in flight simulators  
[NASA-CASE-LAR-12251-1] c 74 N80-27185  
Dual laser optical system and method for studying fluid flow  
[NASA-CASE-MFS-25315-1] c 36 N83-29680  
Photorefractor ocular screening system  
[NASA-CASE-MFS-26011-1-SB] c 52 N87-24874  
Dynamic range compression/expansion of light beams by photorefractive crystals  
[NASA-CASE-NPO-17140-1-CU] c 74 N89-14077

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Refractory coatings and method of producing the same  
[NASA-CASE-LEW-13169-1] c 26 N82-29415

Refractory coatings  
[NASA-CASE-LEW-13169-2] c 26 N82-30371  
Method for repair of thin glass coatings — on space shuttle orbiter tiles  
[NASA-CASE-KSC-11097-1] c 27 N82-33520  
Thermal barrier coating system  
[NASA-CASE-LEW-13324-2] c 24 N85-21266

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High temperature testing apparatus Patent  
[NASA-CASE-XLE-00335] c 14 N70-35368  
Prestressed refractory structure Patent  
[NASA-CASE-XNP-02888] c 18 N71-21068  
Method of manufacturing semiconductor devices using refractory dielectrics  
[NASA-CASE-XER-08476-1] c 26 N72-17820  
High temperature furnace for melting materials in space  
[NASA-CASE-MFS-20710] c 11 N72-23215  
High temperature resistant cermet and ceramic compositions — for thermal resistant insulators and refractory coatings  
[NASA-CASE-NPO-13690-1] c 27 N78-19302  
High temperature resistant cermet and ceramic compositions  
[NASA-CASE-NPO-13690-2] c 27 N79-14213  
Fibrous refractory composite insulation — shielding reusable spacecraft  
[NASA-CASE-ARC-11169-1] c 24 N79-24062  
Catalytic trimerization of aromatic nitriles and triaryl-s-triazine ring cross-linked high temperature resistant polymers and copolymers made thereby  
[NASA-CASE-LEW-12053-2] c 27 N79-28307  
Improved refractory coatings — sputtered coatings on substrates that form stable nitrides  
[NASA-CASE-LEW-23169-2] c 26 N81-16209  
Adjustable high emittance gap filler — reentry shielding for space shuttle vehicles  
[NASA-CASE-ARC-11310-1] c 27 N82-24339  
Attachment system for silica tiles — thermal protection for space shuttle orbiter  
[NASA-CASE-MSC-18741-1] c 27 N82-29456  
Densification of porous refractory substrates — space shuttle orbiter tiles  
[NASA-CASE-MSC-18737-1] c 24 N83-13171  
Method of repairing surface damage to porous refractory substrates — space shuttle orbiter tiles  
[NASA-CASE-MSC-18736-1] c 24 N83-13172  
High temperature silicon carbide impregnated insulating fabrics  
[NASA-CASE-MSC-18832-1] c 27 N83-18908  
Apparatus for accurately preloading auger attachment means for frangible protective material  
[NASA-CASE-MSC-18791-1] c 37 N83-36482  
High temperature resistant polyimide from tetra ester, diamine, diester and N-arylnadimide  
[NASA-CASE-LEW-13864-1] c 27 N86-19457  
Boron-containing organosilane polymers and ceramic materials thereof  
[NASA-CASE-ARC-11649-2-SB] c 27 N90-21177  
Lightweight ceramic insulation and method  
[NASA-CASE-MSC-20782-1] c 27 N90-23566

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[NASA-CASE-XLE-00387] c 33 N70-34812  
Method of producing refractory bodies having controlled porosity Patent  
[NASA-CASE-LEW-10393-1] c 17 N71-15468  
Multilayer porous ionizer Patent  
[NASA-CASE-XNP-04338] c 17 N71-23046  
Brazing alloy Patent  
[NASA-CASE-XNP-03063] c 17 N71-23365  
Thermal radiation shielding Patent  
[NASA-CASE-XLE-03432] c 33 N71-24145  
Method of producing refractory composites containing tantalum carbide, hafnium carbide, and hafnium boride Patent  
[NASA-CASE-XLE-03940] c 18 N71-26153  
Silicide coatings for refractory metals Patent  
[NASA-CASE-XLE-10910] c 18 N71-29040  
Refractory metal base alloy composites  
[NASA-CASE-XLE-03940-2] c 17 N72-28536  
Fused silicide coatings containing discrete particles for protecting niobium alloys — used in space shuttle thermal protection systems and turbine engine components  
[NASA-CASE-LEW-11179-1] c 27 N76-16229  
Method of making an apertured casting — using duplicate mold  
[NASA-CASE-LEW-11169-1] c 37 N76-23570  
Absorbable-susceptor joining of ceramic surfaces  
[NASA-CASE-NPO-15640-1] c 27 N84-22748  
One step HIP canning of powder metallurgy composites  
[NASA-CASE-LEW-14719-1] c 24 N90-23493

**REFRIGERATING**

Helium refrigerator and method for decontaminating the refrigerator  
[NASA-CASE-NPO-10634] c 23 N72-25619  
Magnetic heat pumping  
[NASA-CASE-LEW-12508-3] c 34 N83-29625

**REFRIGERATING MACHINERY**  
Refrigeration apparatus  
[NASA-CASE-NPO-10309] c 15 N69-23190  
Refrigeration apparatus Patent  
[NASA-CASE-XNP-08877] c 15 N71-23025  
Dual solid cryogenics for spacecraft refrigeration Patent  
[NASA-CASE-GSC-10188-1] c 23 N71-24725  
Stirling cycle engine and refrigeration systems  
[NASA-CASE-NPO-13613-1] c 37 N76-29590  
Cycling Joule Thomson refrigerator  
[NASA-CASE-NPO-15251-1] c 31 N83-31897  
Vibration isolation and pressure compensation apparatus for sensitive instrumentation  
[NASA-CASE-LAR-12728-1] c 35 N83-32026  
Magnetically actuated compressor  
[NASA-CASE-GSC-12799-1] c 31 N85-21404  
Oxygen chemisorption cryogenic refrigerator  
[NASA-CASE-NPO-16734-1-CU] c 31 N88-14223

**REFRIGERATORS**  
Intermittent type silica gel adsorption refrigerator Patent  
[NASA-CASE-XNP-00920] c 15 N71-15906  
Helium refrigerator  
[NASA-CASE-NPO-13435-1] c 31 N76-14284  
Thermal compensator for closed-cycle helium refrigerator — assuring constant temperature for an infrared laser diode  
[NASA-CASE-GSC-12168-1] c 31 N79-17029  
Reciprocating magnetic refrigerator employing tandem porous matrices within a reciprocating displacer  
[NASA-CASE-NPO-16257-1] c 31 N85-29082  
Ten degree Kelvin hydride refrigerator  
[NASA-CASE-NPO-16393-1-CU] c 31 N87-21159  
Krypton based adsorption type cryogenic refrigerator  
[NASA-CASE-NPO-17334-1-CU] c 31 N88-23917  
Cryogenic regenerator including saran-carbon heat conduction matrix  
[NASA-CASE-NPO-17291-1-CU] c 34 N88-23946  
Self-actuating heat switches for redundant refrigeration systems  
[NASA-CASE-NPO-17085-1-CU] c 31 N89-12785  
Joule Thomson refrigerator  
[NASA-CASE-NPO-17143-1-CU] c 31 N89-14351  
Two stage sorption type cryogenic refrigerator including heat regeneration system  
[NASA-CASE-NPO-17630-1-CU] c 31 N89-29577  
Multicomponent gas sorption Joule-Thomson refrigerator  
[NASA-CASE-NPO-17569-1-CU] c 31 N90-26176

**REFUELING**  
Quick-disconnect inflatable seal assembly  
[NASA-CASE-KSC-11368-1] c 37 N89-13786

**REGENERATION (ENGINEERING)**  
Switching circuit employing regeneratively connected complementary transistors Patent  
[NASA-CASE-XNP-02654] c 10 N70-42032  
Regenerative braking system Patent  
[NASA-CASE-XMF-01096] c 10 N71-16030  
Free-piston regenerative hot gas hydraulic engine  
[NASA-CASE-LEW-12274-1] c 37 N80-31790  
Cryogenic regenerator including saran-carbon heat conduction matrix  
[NASA-CASE-NPO-17291-1-CU] c 34 N88-23946  
Regenerative Cu La zeolite supported desulfurizing sorbents  
[NASA-CASE-NPO-17480-1-CU] c 25 N90-26098

**REGENERATION (PHYSIOLOGY)**  
Implantable electrical device  
[NASA-CASE-GSC-12560-1] c 52 N82-29863  
Method and apparatus for bio-regenerative life support system  
[NASA-CASE-MSC-21629-1] c 54 N89-29027

**REGENERATIVE COOLING**  
Formed metal ribbon wrap Patent  
[NASA-CASE-XLE-00164] c 15 N70-36411  
Method of making a regeneratively cooled combustion chamber Patent  
[NASA-CASE-XLE-00150] c 28 N70-41818  
Small rocket engine Patent  
[NASA-CASE-XLE-00685] c 28 N70-41992  
Combustion chamber Patent  
[NASA-CASE-XLE-04857] c 28 N71-23968  
Method of making apparatus for sensing temperature  
[NASA-CASE-XLE-05230-2] c 14 N73-13417

**REGENERATIVE FUEL CELLS**  
Electrolytically regenerative hydrogen-oxygen fuel cell Patent  
[NASA-CASE-XLE-04526] c 03 N71-11052

**REGENERATORS**

Code regenerative clean-up loop transponder for a mu-type ranging system  
[NASA-CASE-NPO-11707] c 07 N73-25161  
Magnetic heat pumping  
[NASA-CASE-LEW-12508-3] c 34 N83-29625  
Two stage sorption type cryogenic refrigerator including heat regeneration system  
[NASA-CASE-NPO-17630-1-CU] c 31 N89-29577

**REGISTERS (COMPUTERS)**  
Variable digital processor including a register for shifting and rotating bits in either direction Patent  
[NASA-CASE-GSC-10188] c 08 N71-33110  
Priority interrupt system — comprised of four registers  
[NASA-CASE-NPO-13067-1] c 60 N76-18800

**REINFORCED PLASTICS**  
Tube fabricating process  
[NASA-CASE-LAR-10203-1] c 15 N72-16330  
Reinforced structural plastics  
[NASA-CASE-LEW-10199-1] c 27 N74-23125

**REINFORCEMENT (STRUCTURES)**  
Reinforcing means for diaphragms Patent  
[NASA-CASE-XNP-01962] c 32 N70-41370

**REINFORCEMENT RINGS**  
Tube coupling device  
[NASA-CASE-MFS-25964-2] c 37 N87-22977

**REINFORCING FIBERS**  
Reinforced metallic composites Patent  
[NASA-CASE-XLE-02428] c 17 N70-33288  
Method of making fiber reinforced metallic composites Patent  
[NASA-CASE-XLE-00231] c 17 N70-38198  
Method for producing fiber reinforced metallic composites Patent  
[NASA-CASE-XLE-03925] c 18 N71-22894  
Thermal protection ablation spray system Patent  
[NASA-CASE-XLA-04251] c 18 N71-26100  
Method of preparing graphite reinforced aluminum composite  
[NASA-CASE-MFS-21077-1] c 24 N75-28135  
Crystalline polyimides — reinforcing fibers for high temperature composites and adhesives as well as flame retardation  
[NASA-CASE-LAR-12099-1] c 27 N80-16158  
Composition and method for making polyimide resin-reinforced fabric  
[NASA-CASE-LEW-12933-1] c 27 N81-19296  
High modulus rare earth and beryllium containing silicate glass compositions — for glass reinforcing fibers  
[NASA-CASE-HQN-10595-1] c 27 N82-29455  
Method of carbonizing polyacrylonitrile fibers  
[NASA-CASE-ARC-11261-1] c 24 N83-25789  
Fluoroether modified epoxy composites  
[NASA-CASE-ARC-11418-1] c 24 N84-11213  
Lightweight piston  
[NASA-CASE-LAR-13150-1] c 24 N87-27742  
Seamless metal-clad fiber-reinforced organic matrix composite structures and process for their manufacture  
[NASA-CASE-LAR-13562-1] c 24 N90-25196

**RELAXATION OSCILLATORS**  
Voltage to frequency converter Patent  
[NASA-CASE-GSC-10022-1] c 10 N71-25882

**RELAY SATELLITES**  
Satellite communication system and method Patent  
[NASA-CASE-GSC-10118-1] c 07 N71-24621  
Satellite personal communications system  
[NASA-CASE-NPO-14480-1] c 32 N80-20448

**RELEASING**  
Despin weight release Patent  
[NASA-CASE-XLA-00679] c 15 N70-38601  
Quick attach and release fluid coupling assembly Patent  
[NASA-CASE-XKS-01985] c 15 N71-10782  
Redundant actuating mechanism Patent  
[NASA-CASE-XGS-08718] c 15 N71-24600  
Quick release hook tape Patent  
[NASA-CASE-XMS-10660-1] c 15 N71-25975  
Delayed simultaneous release mechanism  
[NASA-CASE-GSC-10814-1] c 03 N73-20039  
Slide release mechanism — for space shuttle orbiter/external tank connection device  
[NASA-CASE-MSC-20080-1] c 37 N85-30334  
Fully redundant mechanical release actuator  
[NASA-CASE-LAR-13198-1] c 37 N87-23983  
Preloadable vector sensitive latch  
[NASA-CASE-MSC-20910-1] c 37 N87-25582  
Releasable clamping apparatus  
[NASA-CASE-MFS-28192-1] c 37 N90-17154  
Double swivel toggle release  
[NASA-CASE-MSC-21436-1] c 37 N90-21390

**RELIABILITY ANALYSIS**  
Program for computer aided reliability estimation  
[NASA-CASE-NPO-13086-1] c 15 N73-12495  
Integrated circuit reliability testing  
[NASA-CASE-NPO-17393-1-CU] c 33 N89-29679

## RELIABILITY ENGINEERING

Method of improving the reliability of a rolling element system Patent  
[NASA-CASE-XLE-02999] c 15 N71-16052

Inspection gage for boss Patent  
[NASA-CASE-XMF-04966] c 14 N71-17658

Valving device for automatic refilling in cryogenic liquid systems  
[NASA-CASE-NPO-11177] c 15 N72-17453

Electrical connector  
[NASA-CASE-NPO-10694] c 09 N72-20200

Inherent redundancy electric heater  
[NASA-CASE-MFS-21462-1] c 33 N74-14935

Hollow rolling element bearings  
[NASA-CASE-LEW-11087-3] c 37 N74-21064

Reconfiguring redundancy management  
[NASA-CASE-MSC-18498-1] c 60 N82-29013

Phase sensitive guidance sensor for wire-following vehicles  
[NASA-CASE-NPO-15341-1] c 35 N84-33769

Lightweight piston  
[NASA-CASE-LAR-13150-1] c 24 N87-27742

**RELIEF MAPS**  
Method and apparatus for contour mapping using synthetic aperture radar  
[NASA-CASE-NPO-15939-1] c 43 N86-19711

**RELIEF VALVES**  
Relief valve  
[NASA-CASE-XMS-05894-1] c 15 N69-21924

Zero gravity separator Patent  
[NASA-CASE-XLE-00586] c 15 N71-15968

Redundant hydraulic control system for actuators  
[NASA-CASE-MFS-20944] c 15 N73-13466

Prosthetic urinary sphincter  
[NASA-CASE-MFS-23717-1] c 52 N81-25660

Ion beam sputter-etched ventricular catheter for hydrocephalus shunt  
[NASA-CASE-LEW-13107-1] c 52 N83-21785

**REMOTE CONTROL**  
Electromagnetic mirror drive system  
[NASA-CASE-XLA-03724] c 14 N69-27481

Tubular coupling having frangible connecting means  
[NASA-CASE-XLA-02854] c 15 N69-27490

Bimetallic power controlled actuator  
[NASA-CASE-XNP-09776] c 09 N69-39929

Fluid coupling Patent  
[NASA-CASE-XLE-00397] c 15 N70-36492

Umbilical disconnect Patent  
[NASA-CASE-XLA-00711] c 03 N71-12258

Remote controlled tubular disconnect Patent  
[NASA-CASE-XLA-01396] c 03 N71-12259

Three-axis finger tip controller for switches Patent  
[NASA-CASE-XAC-02405] c 09 N71-16089

Satellite communication system Patent  
[NASA-CASE-XNP-02389] c 07 N71-28900

Method and apparatus for aligning a laser beam projector Patent  
[NASA-CASE-NPO-11087] c 23 N71-29125

Solid state remote circuit selector switch  
[NASA-CASE-LEW-10387] c 09 N72-22201

Laser communication system for controlling several functions at a location remote to the laser  
[NASA-CASE-LAR-10311-1] c 16 N73-16536

Cooperative multiaxis sensor for teleoperation of article manipulating apparatus  
[NASA-CASE-NPO-13386-1] c 54 N75-27758

Remotely operable articulated manipulator  
[NASA-CASE-MFS-22707-1] c 37 N76-15457

Remote manipulator system  
[NASA-CASE-MFS-22022-1] c 37 N76-15460

Remote lightning monitor system  
[NASA-CASE-KSC-11031-1] c 33 N79-11315

Simulator method and apparatus for practicing the mating of an observer-controlled object with a target  
[NASA-CASE-MFS-23052-2] c 74 N79-13855

Terminal guidance sensor system — space shuttle coupling to orbiting satellites  
[NASA-CASE-NPO-14521-1] c 37 N81-27519

Retinally stabilized differential resolution television display  
[NASA-CASE-NPO-15432-1] c 32 N85-29117

Digital control of diode laser for atmospheric spectroscopy  
[NASA-CASE-NPO-16000-1] c 36 N85-29264

Remotely controllable mixing system  
[NASA-CASE-MFS-28153-1] c 31 N86-32589

Remotely operable peristaltic pump  
[NASA-CASE-MFS-28059-1] c 37 N86-32738

Radial and torsionally controlled magnetic bearing  
[NASA-CASE-GSC-12957-1] c 37 N87-17038

Apparatus and method of capturing an orbiting spacecraft  
[NASA-CASE-MSC-20979-1] c 37 N87-22985

Remotely controlled spray gun  
[NASA-CASE-MFS-28110-1] c 37 N87-24689

Improved docking alignment system  
[NASA-CASE-MSC-21372-1] c 35 N89-12842

Magnetic attachment mechanism  
[NASA-CASE-MSC-21095-1] c 37 N89-12866

Remotely controllable real-time optical processor  
[NASA-CASE-NPO-16750-1-CU] c 74 N89-14078

**REMOTE HANDLING**  
Remote control manipulator for zero gravity environment  
[NASA-CASE-MFS-14405] c 15 N72-28495

Apparatus for remote handling of materials — mixing or analyzing dangerous chemicals  
[NASA-CASE-LAR-10634-1] c 37 N74-18123

Anthropomorphic master/slave manipulator system  
[NASA-CASE-ARC-10756-1] c 54 N77-32721

Controller arm for a remotely related slave arm  
[NASA-CASE-ARC-11052-1] c 37 N79-28551

Apparatus for sequentially transporting containers  
[NASA-CASE-MFS-23846-1] c 37 N82-32731

Precision manipulator heating and cooling apparatus for use in UHV systems with sample transfer capability  
[NASA-CASE-LAR-13040-1] c 37 N85-29286

Space spider crane  
[NASA-CASE-LAR-13411-1-SB] c 18 N88-23828

Mobile remote manipulator system for a tetrahedral truss  
[NASA-CASE-MSC-20985-1] c 18 N88-26398

**REMOTE MANIPULATOR SYSTEM**  
Coupling device for moving vehicles  
[NASA-CASE-GSC-12322-1] c 37 N80-14398

Apparatus and method of capturing an orbiting spacecraft  
[NASA-CASE-MSC-20979-1] c 37 N87-22985

Mobile remote manipulator vehicle system  
[NASA-CASE-LAR-13393-1] c 54 N87-29118

**REMOTE SENSING**  
Method and apparatus for calibrating the ionosphere and application to surveillance of geophysical events  
[NASA-CASE-NPO-15430-1] c 46 N85-21846

Thermal remote anemometer system  
[NASA-CASE-LAR-13508-1] c 35 N88-23962

Remote object configuration/orientation determination  
[NASA-CASE-NPO-17436-1-CU] c 35 N89-13764

**REMOTE SENSORS**  
Passive optical wind and turbulence detection system Patent  
[NASA-CASE-XMF-14032] c 20 N71-16340

Pressure monitoring with a plurality of ionization gauges controlled at a central location Patent  
[NASA-CASE-XLE-00787] c 14 N71-21090

Flow angle sensor and read out system Patent  
[NASA-CASE-XLE-04503] c 14 N71-24864

Time synchronization system utilizing moon reflected coded signals Patent  
[NASA-CASE-NPO-10143] c 10 N71-26326

Clear air turbulence detector  
[NASA-CASE-ERC-10081] c 14 N72-28437

Intruder detection system  
[NASA-CASE-ARC-10097-2] c 07 N73-25160

Microwave power transmission system wherein level of transmitted power is controlled by reflections from receiver  
[NASA-CASE-MFS-21470-1] c 44 N74-19870

Voltage monitoring system  
[NASA-CASE-KSC-10738-1] c 33 N75-19521

Wind sensor  
[NASA-CASE-NPO-13462-1] c 35 N76-24524

Focused laser Doppler velocimeter  
[NASA-CASE-MFS-23178-1] c 35 N77-10493

Wind measurement system  
[NASA-CASE-MFS-23362-1] c 47 N77-10753

Penetrometer — for determining load bearing characteristics of inclined surfaces  
[NASA-CASE-NPO-11103-1] c 35 N77-27367

Remote sensing of vegetation and soil using microwave ellipsometry  
[NASA-CASE-GSC-11976-1] c 43 N78-10529

Remote water monitoring system  
[NASA-CASE-LAR-11973-1] c 35 N78-27384

Radar target for remotely sensing hydrological phenomena  
[NASA-CASE-LAR-12344-1] c 43 N80-18498

Method of and apparatus for measuring temperature and pressure — atmospheric sounding  
[NASA-CASE-GSC-12558-1] c 36 N85-21639

**REMOTELY PILOTED VEHICLES**  
Rotating launch device for a remotely piloted aircraft  
[NASA-CASE-ARC-10979-1] c 09 N77-19076

**REMOVAL**  
Catalyst bed removing tool Patent  
[NASA-CASE-XFR-00811] c 15 N70-36901

Recovery of aluminum from composite propellants  
[NASA-CASE-NPO-14110-1] c 28 N81-15119

Acoustic bubble removal method  
[NASA-CASE-NPO-15334-1] c 71 N83-35781

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**REPLACING**  
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[NASA-CASE-NPO-10625] c 09 N71-26182

**RESCUE OPERATIONS**  
Backpack carrier Patent  
[NASA-CASE-LAR-10056] c 05 N71-12351

Rescue litter flotation assembly Patent  
[NASA-CASE-XMS-04170] c 05 N71-22748

Method of locating persons in distress — by using radar imagery from radar reflectors  
[NASA-CASE-LAR-11390-1] c 32 N77-21267

Apparatus and method of capturing an orbiting spacecraft  
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**RESEARCH AIRCRAFT**  
Miniature electrooptical air flow sensor  
[NASA-CASE-LAR-13065-1] c 35 N85-20295

**RESEARCH AND DEVELOPMENT**  
Tube fabricating process  
[NASA-CASE-LAR-10203-1] c 15 N72-16330

**RESEARCH VEHICLES**  
Lunar landing flight research vehicle Patent  
[NASA-CASE-XFR-00929] c 31 N70-34966

Velocity limiting safety system Patent  
[NASA-CASE-XLA-07473] c 15 N71-24895

**RESIDUAL STRESS**  
Miniature stress transducer Patent  
[NASA-CASE-XNP-02983] c 14 N71-21091

Method of making a perspiration resistant biopotential electrode  
[NASA-CASE-MSC-90153-2] c 05 N72-25120

**RESILIENCE**  
Resilience testing device Patent  
[NASA-CASE-XLA-08254] c 14 N71-26161

**RESIN BONDING**  
Method and apparatus for bonding a plastics sleeve onto a metallic body Patent  
[NASA-CASE-XLA-01262] c 15 N71-21404

Covered silicon solar cells and method of manufacture — with polymeric films  
[NASA-CASE-LEW-11065-2] c 44 N76-14600

Method of manufacture of bonded fiber flywheel — fiberglass-epoxy  
[NASA-CASE-MFS-23674-1] c 24 N81-29163

**RESIN MATRIX COMPOSITES**  
Phosphorus-containing bisimide resins  
[NASA-CASE-ARC-11321-1] c 27 N81-27272

Elastomer coated filler and composites thereof comprising at least 60% by weight of a hydrated filler and an elastomer containing an acid substituent  
[NASA-CASE-NPO-14857-1] c 27 N83-19900

Method of tracing contour patterns for use in making gradual contour resin matrix composites  
[NASA-CASE-ARC-11246-1] c 31 N83-34073

Copolymers of vinyl styrylpyridines or vinyl stilbazoles with bismaleimide  
[NASA-CASE-ARC-11429-1-CU] c 27 N86-20560

High performance mixed bisimide resins and composites based thereon  
[NASA-CASE-ARC-11538-1SB] c 24 N86-21590

Toughening reinforced epoxy composites with brominated polymeric additives  
[NASA-CASE-ARC-11427-2] c 27 N86-27451

Process for preparing phthalocyanine polymer from imide containing bisphthalonitrile  
[NASA-CASE-ARC-11511-2] c 27 N87-21112

Novel ladder polymers for use as high temperature stable resins or coatings  
[NASA-CASE-LEW-14203-1] c 27 N88-29984

Processable polyimide adhesive and matrix composite resin  
[NASA-CASE-LAR-14101-1] c 27 N89-23692

Semipermeating polymer network for tougher and more microcracking resistant high temperature polymers  
[NASA-CASE-LAR-13925-1] c 27 N89-25334

Method of controlling a resin curing process — for fiber reinforced composites  
[NASA-CASE-MSC-21169-1] c 27 N89-29539

**RESINS**  
Modified polyurethane foams for fuel-fire Patent  
[NASA-CASE-ARC-10098-1] c 06 N71-24739

Bonding or repairing process  
[NASA-CASE-MSC-12357] c 15 N73-12489

Semiconductor surface protection material  
[NASA-CASE-ERC-10339-1] c 18 N73-30532

Composite lamination method  
[NASA-CASE-LAR-12019-1] c 24 N78-17150

Polyvinyl alcohol cross-linked with two aldehydes  
[NASA-CASE-LEW-13504-1] c 25 N83-13188



- Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-1] c 27 N83-31854
- Fire and heat resistant laminating resins based on maleimido and citraconimido substituted 1-(diorgano oxyphosphonyl) methyl -2,4- and -2,6- diaminobenzenes  
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- Fire and heat resistant laminating resin based on maleimido and citraconimido substituted 1-(diorganooxyphosphonyl-methyl)-2,4- and -2,6-diaminobenzenes  
[NASA-CASE-ARC-11533-2] c 27 N89-16042
- A tough high performance composite matrix  
[NASA-CASE-LAR-14338-1] c 24 N90-26881
- RESISTANCE**  
Method of making a perspiration resistant biopotential electrode  
[NASA-CASE-MS-C-90153-2] c 05 N72-25120
- Variable resistance constant tension and lubrication device — using oil-saturated leather wiper  
[NASA-CASE-KSC-10723-1] c 37 N75-13265
- Acoustic ground impedance meter  
[NASA-CASE-LAR-12895-1] c 35 N84-22933
- RESISTANCE HEATING**  
Electrothermal rockets having improved heat exchangers Patent  
[NASA-CASE-XLE-01783] c 28 N70-34175
- Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NAS 1.71:NPO-15494-2] c 35 N85-34373
- RESISTORS**  
High isolation RF signal selection switches  
[NASA-CASE-NPO-13081-1] c 33 N74-22814
- Resistive anode image converter  
[NASA-CASE-HQN-10876-1] c 33 N76-27473
- Amplifier for measuring low-level signals in the presence of high common mode voltage  
[NASA-CASE-MFS-25868-1] c 33 N86-20670
- RESOLUTION**  
Analog-to-digital conversion system Patent  
[NASA-CASE-XAC-00404] c 08 N70-40125
- Spectroscope equipment using a slender cylindrical reflector as a substitute for a slit Patent  
[NASA-CASE-XGS-08269] c 23 N71-26206
- Resolution enhanced sound detecting apparatus  
[NASA-CASE-NPO-14134-1] c 71 N79-23753
- Television monitor field shifter and an opto-electronic method for obtaining a stereo image of optimal depth resolution and reduced depth distortion on a single screen  
[NASA-CASE-NPO-17249-1-CU] c 32 N89-28676
- Phase ambiguity resolution for offset QPSK modulation systems  
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- RESOLVERS**  
Differential phase shift keyed signal resolver  
[NASA-CASE-MS-C-14066-1] c 33 N74-27705
- Focal axis resolver for offset reflector antennas  
[NASA-CASE-GSC-12630-1] c 33 N83-36355
- Magnetic heading reference  
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- Angular measurement system  
[NASA-CASE-MFS-25825-1] c 31 N86-29055
- RESONANCE**  
Optically selective, acoustically resonant gas detecting transducer  
[NASA-CASE-ARC-10639-1] c 35 N78-13400
- Resonant isolator for maser amplifier  
[NASA-CASE-NPO-15201-1] c 36 N83-35350
- Arrangement for damping the resonance in a laser diode  
[NASA-CASE-NPO-15980-1] c 36 N85-30305
- Precision tunable resonant microwave cavity  
[NASA-CASE-LEW-13935-1] c 33 N87-21234
- RESONANT FREQUENCIES**  
Vibrating element electrometer with output signal magnified over input signal by a function of the mechanical Q of the vibrating element Patent  
[NASA-CASE-XAC-02807] c 09 N71-23021
- Apparatus for detecting the amount of material in a resonant cavity container Patent  
[NASA-CASE-XNP-02500] c 18 N71-27397
- Parasitic suppressing circuit  
[NASA-CASE-ERC-10403-1] c 10 N73-26228
- CW ultrasonic bolt tensioning monitor  
[NASA-CASE-LAR-12016-1] c 39 N78-15512
- Microbalance — for measuring particle mass  
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- Method and apparatus for shaping and enhancing acoustical levitation forces  
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- Acoustic bubble removal method  
[NASA-CASE-NPO-15334-1] c 71 N83-35781
- Low noise tuned amplifier  
[NASA-CASE-GSC-12567-1] c 33 N84-22887
- Acoustic ground impedance meter  
[NASA-CASE-LAR-12895-1] c 35 N84-22933
- Vibrating-chamber levitation systems  
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- Single mode levitation and translation  
[NASA-CASE-NPO-16675-1-CU] c 71 N88-24241
- Reflection oscillators employing series resonant crystals  
[NASA-CASE-GSC-13173-1] c 33 N90-23635
- RESONANT VIBRATION**  
Acoustic agglomeration methods and apparatus  
[NASA-CASE-NPO-15466-1] c 71 N85-22104
- RESONATORS**  
High-Q bandpass resonators utilizing bandstop resonator pairs  
[NASA-CASE-GSC-10990-1] c 09 N73-26195
- Low noise cryogenic dielectric resonator oscillator  
[NASA-CASE-NPO-17157-1-CU] c 33 N88-26596
- Method and circuit for shaping laser output pulses  
[NASA-CASE-LAR-14203-1] c 36 N89-28817
- RESOURCE ALLOCATION**  
Dynamic resource allocation scheme for distributed heterogeneous computer systems  
[NASA-CASE-NPO-17197-1-CU] c 62 N89-29976
- RESPIRATION**  
Method and system for respiration analysis Patent  
[NASA-CASE-XFR-08403] c 05 N71-11202
- RESPIRATORS**  
Respiration monitor  
[NASA-CASE-FRC-10012] c 14 N72-17329
- RESPIRATORY RATE**  
Gas low pressure low flow rate metering system Patent  
[NASA-CASE-FRC-10022] c 12 N71-26546
- Respiratory analysis system and method  
[NASA-CASE-MS-C-13436-1] c 05 N73-32015
- Metabolic analyzer — for measuring metabolic rate and breathing dynamics of human beings  
[NASA-CASE-MFS-21415-1] c 52 N74-20728
- RESPIROMETERS**  
Metabolic analyzer — for measuring metabolic rate and breathing dynamics of human beings  
[NASA-CASE-MFS-21415-1] c 52 N74-20728
- RESPONSE TIME (COMPUTERS)**  
Dynamic resource allocation scheme for distributed heterogeneous computer systems  
[NASA-CASE-NPO-17197-1-CU] c 62 N89-29976
- RESPONSES**  
Frequency division multiplex technique  
[NASA-CASE-KSC-10521] c 07 N73-20176
- RESTARTABLE ROCKET ENGINES**  
Zero gravity starting means for liquid propellant motors Patent  
[NASA-CASE-XNP-01390] c 28 N70-41275
- Small rocket engine Patent  
[NASA-CASE-XLE-00685] c 28 N70-41892
- RESUSCITATION**  
Resuscitation apparatus Patent  
[NASA-CASE-XMS-01115] c 05 N70-39922
- RETAINING**  
Floating nut retention system  
[NASA-CASE-MS-C-16938-1] c 37 N80-23653
- Modified spiral wound retaining ring  
[NASA-CASE-LAR-12361-1] c 37 N83-19091
- RETARDERS (DEVICES)**  
Thrust reverser for a long duct fan engine — for turbofan engines  
[NASA-CASE-LEW-13189-1] c 07 N82-26293
- RETARDING**  
Ablative resin Patent  
[NASA-CASE-XLE-05913] c 33 N71-14032
- RETICLES**  
Optical tracker having overlapping reticles on parallel axes Patent  
[NASA-CASE-XGS-05715] c 23 N71-16100
- Star tracking reticles and process for the production thereof  
[NASA-CASE-GSC-11188-2] c 21 N73-19630
- Star tracking reticles  
[NASA-CASE-GSC-11188-1] c 14 N73-32320
- Formation of star tracking reticles  
[NASA-CASE-GSC-11188-3] c 74 N74-20008
- Star scanner — with a reticle with a pair of slits having differing separation  
[NASA-CASE-GSC-11569-1] c 89 N74-30886
- RETINAL IMAGES**  
Retinally stabilized differential resolution television display  
[NASA-CASE-NPO-15432-1] c 32 N85-29117
- RETRACTABLE EQUIPMENT**  
Runway light Patent  
[NASA-CASE-XLA-00119] c 11 N70-33329
- Extensible cable support Patent  
[NASA-CASE-XMF-07587] c 15 N71-18701
- Retractable environmental seal  
[NASA-CASE-MFS-23646-1] c 37 N79-22474
- Antenna deployment mechanism for use with a spacecraft — extensible and retractable telescopic antenna mast  
[NASA-CASE-GSC-12331-1] c 18 N80-14183
- CAM controlled retractable door latch  
[NASA-CASE-MS-C-20304-1] c 37 N82-31690
- Satellite retrieval system  
[NASA-CASE-MFS-25403-1] c 18 N83-29303
- RETROFIRING**  
Visual target for retrofire attitude control  
[NASA-CASE-XMS-12158-1] c 31 N69-27499
- Discrete local altitude sensing device Patent  
[NASA-CASE-XMS-03792] c 14 N70-41812
- RETROREFLECTION**  
Interferometer servo system Patent  
[NASA-CASE-NPO-10300] c 14 N71-17662
- Over-under double-pass interferometer  
[NASA-CASE-NPO-13999-1] c 35 N78-18395
- Method and apparatus for Doppler frequency modulation of radiation  
[NASA-CASE-NPO-14524-1] c 32 N80-24510
- Remote object configuration/orientation determination  
[NASA-CASE-NPO-17436-1-CU] c 35 N89-13764
- RETROREFLECTORS**  
Interferometer — high resolution  
[NASA-CASE-NPO-14448-1] c 74 N81-29963
- Low noise lead screw positioner  
[NASA-CASE-NPO-15617-1] c 35 N87-21304
- Equal path, phase shifting, sample point interferometer for monitoring the configuration of surfaces  
[NASA-CASE-NPO-17913-1-CU] c 74 N90-27488
- RETROCKET ENGINES**  
Steerable solid propellant rocket motor Patent  
[NASA-CASE-XNP-00234] c 28 N70-38645
- REUSABLE HEAT SHIELDING**  
High temperature glass thermal control structure and coating — for application to spacecraft reusable heat shielding  
[NASA-CASE-ARC-11164-1] c 44 N83-34448
- REUSABLE ROCKET ENGINES**  
Earth-to-orbit vehicle providing a reusable orbital stage  
[NASA-CASE-LAR-13486-1] c 16 N90-22584
- REUSABLE SPACECRAFT**  
Recoverable single stage spacecraft booster Patent  
[NASA-CASE-XMF-01973] c 31 N70-41588
- Space shuttle vehicle and system  
[NASA-CASE-MS-C-12433] c 31 N73-14854
- Aerospace vehicle  
[NASA-CASE-LAR-13155-1] c 05 N86-19310
- REUSE**  
Silica reusable surface insulation  
[NASA-CASE-ARC-10721-1] c 27 N76-22376
- Reusable captive blind fastener  
[NASA-CASE-MS-C-18742-1] c 37 N82-26673
- Cryogenic insulation system  
[NASA-CASE-LAR-13506-1] c 27 N89-12741
- Reusable high-temperature heat pipes and heat pipe panels  
[NASA-CASE-LAR-13761-1] c 34 N90-20323
- REVERSE OSMOSIS**  
Reverse osmosis membrane of high urea rejection properties — water purification  
[NASA-CASE-ARC-10980-1] c 27 N80-23452
- Method for the preparation of thin-skinned asymmetric reverse osmosis membranes and products thereof  
[NASA-CASE-ARC-11359-1] c 51 N84-28361
- REVERSED FLOW**  
Multistage multiple-reentry turbine Patent  
[NASA-CASE-XLE-00170] c 15 N70-36412
- Reversible current control apparatus Patent  
[NASA-CASE-XLA-09371] c 10 N71-18724
- Positive locking check valve Patent  
[NASA-CASE-XMS-09310] c 15 N71-22706
- Reverse pitch fan with divided splitter  
[NASA-CASE-LEW-12760-1] c 07 N77-17059
- Reversal electron attachment ionizer for detection of trace species  
[NASA-CASE-NPO-17596-1-CU] c 35 N89-28795
- REYNOLDS NUMBER**  
Wind tunnel test section  
[NASA-CASE-MFS-20509] c 11 N72-17183
- REYNOLDS STRESS**  
System for measuring Reynolds in a turbulently flowing fluid — signal processing  
[NASA-CASE-ARC-10755-2] c 34 N76-27517
- RHENIUM**  
Thermocouples of tantalum and rhenium alloys for more stable vacuum-high temperature performance  
[NASA-CASE-LEW-12050-1] c 35 N77-32454
- RHEOMETERS**  
Viscosity measuring instrument  
[NASA-CASE-NPO-14501-1] c 35 N80-18357
- RHOMBIDS**  
Rhomboid prism pair for rotating the plane of parallel light beams  
[NASA-CASE-ARC-11311-1] c 74 N83-13978

**RIBBONS**

- Formed metal ribbon wrap Patent  
[NASA-CASE-XLE-00164] c 15 N70-36411
- Forming tool for ribbon or wire  
[NASA-CASE-XLA-05966] c 15 N72-12408
- Twisted multifilament superconductor  
[NASA-CASE-LEW-11726-1] c 26 N73-26752
- Method of controlling defect orientation in silicon crystal ribbon growth  
[NASA-CASE-NPO-13918-1] c 76 N79-11920
- Solar array strip and a method for forming the same  
[NASA-CASE-NPO-13652-1] c 44 N79-17314
- Growth of silicon carbide crystals on a seed while pulling silicon crystals from a melt  
[NASA-CASE-NPO-13969-1] c 76 N79-23798
- Bonding machine for forming a solar array strip  
[NASA-CASE-NPO-13652-2] c 44 N79-24431
- Method for forming a solar array strip  
[NASA-CASE-NPO-13652-3] c 44 N80-14474
- Means for growing ribbon crystals without subjecting the crystals to thermal shock-induced strains  
[NASA-CASE-NPO-14298-1] c 76 N80-32244
- Method of growing a ribbon crystal particularly suited for facilitating automated control of ribbon width  
[NASA-CASE-NPO-14295-1] c 76 N80-32245
- Apparatus for use in the production of ribbon-shaped crystals from a silicon melt  
[NASA-CASE-NPO-14297-1] c 33 N81-19389
- Method of increasing minority carrier lifetime in silicon web or the like  
[NASA-CASE-NPO-15530-1] c 76 N83-35888
- Ribbon growing method and apparatus  
[NASA-CASE-NPO-16306-1-CU] c 76 N85-30934

**RIBBLETS**

- Combined riblet and lebu drag reduction system  
[NASA-CASE-LAR-13286-1] c 02 N88-14071

**RIBOFLAVIN**

- Flavin coenzyme assay  
[NASA-CASE-GSC-10565-1] c 06 N72-25149

**RIBS (SUPPORTS)**

- Aeroflexible structures  
[NASA-CASE-XLA-06095] c 01 N69-39981

**RICE**

- Modification of the physical properties of freeze-dried rice  
[NASA-CASE-MS-C-13540-1] c 05 N72-33096

**RIDING QUALITY**

- Ride quality meter  
[NASA-CASE-LAR-12882-1] c 35 N84-12445

**RIGID ROTORS**

- Hingeless helicopter rotor with improved stability  
[NASA-CASE-ARC-10807-1] c 05 N77-17029

**RIGID STRUCTURES**

- Quick release hook tape Patent  
[NASA-CASE-XMS-10660-1] c 15 N71-25975
- Thermally activated foaming compositions Patent  
[NASA-CASE-LAR-10373-1] c 18 N71-26155
- Adjustable mount for a trihedral mirror Patent  
[NASA-CASE-XNP-08907] c 23 N71-29123
- Folding structure fabricated of rigid panels  
[NASA-CASE-XHQ-02146] c 18 N75-27040
- Telescoping columns — parabolic antenna support  
[NASA-CASE-LAR-12195-1] c 31 N81-27324
- Clevis joint for deployable space structures  
[NASA-CASE-LAR-13898-1] c 37 N88-30130
- Direct drive robotic hand  
[NASA-CASE-NPO-17917-1-CU] c 37 N90-26339

**RIGID WINGS**

- Flexible wing deployment device Patent  
[NASA-CASE-XLA-01220] c 02 N70-41863

**RIMS**

- Rim inertial measuring system  
[NASA-CASE-LAR-12052-1] c 18 N81-29152

**RING CURRENTS**

- Ring counter  
[NASA-CASE-XGS-03095] c 09 N69-27463

**RING STRUCTURES**

- Reversible ring counter employing cascaded single SCR stages Patent  
[NASA-CASE-XGS-01473] c 09 N71-10673
- Energy absorbing device Patent  
[NASA-CASE-XMF-10040] c 15 N71-22877
- Phase-locked servo system — for synchronizing the rotation of slip ring assembly  
[NASA-CASE-MFS-22073-1] c 33 N75-13139
- Laser system with an antiresonant optical ring  
[NASA-CASE-HQN-10844-1] c 36 N75-19653
- Helmet latching and attaching ring  
[NASA-CASE-XMS-04670] c 54 N78-17678
- Collapsible corrugated horn antenna  
[NASA-CASE-LAR-11745-1] c 32 N80-29539
- Modified spiral wound retaining ring  
[NASA-CASE-LAR-12361-1] c 37 N83-19091
- Torso sizing ring construction for hard space suit  
[NASA-CASE-ARC-11616-1] c 54 N86-28618

- Method and apparatus for making an optical element having a dielectric film  
[NASA-CASE-ARC-11611-1] c 74 N87-28416

**RING WINGS**

- Ring wing tension vehicle Patent  
[NASA-CASE-XLA-04901] c 31 N71-24315

**RIPPLES**

- Ripple indicator  
[NASA-CASE-KSC-10162] c 09 N72-11225

**RIVETS**

- Printed circuit board with bellows rivet connection Patent  
[NASA-CASE-XNP-05082] c 15 N70-41960

**ROBOT ARMS**

- Direct drive robotic hand  
[NASA-CASE-NPO-17917-1-CU] c 37 N90-26339
- Method and apparatus for configuration control of redundant robots  
[NASA-CASE-NPO-17801-1-CU] c 37 N90-27110

**ROBOT DYNAMICS**

- Method and apparatus for positioning a robotic end effector  
[NASA-CASE-MS-C-21476-1] c 37 N90-17137
- Method and apparatus for configuration control of redundant robots  
[NASA-CASE-NPO-17801-1-CU] c 37 N90-27110

**ROBOTICS**

- Self-locking telescoping manipulator arm  
[NASA-CASE-MFS-25906-1] c 37 N86-20789
- Remotely controlled spray gun  
[NASA-CASE-MFS-28110-1] c 37 N87-24689
- A universal computer control system for motors  
[NASA-CASE-NPO-17134-1-CU] c 33 N88-24864
- Optically controlled welding system  
[NASA-CASE-MFS-29291-1] c 37 N89-12868
- Passively activated prehensile digit for a robotic end effector  
[NASA-CASE-NPO-16766-1-CU] c 37 N89-13785
- Distributed proximity sensor system  
[NASA-CASE-NPO-17275-1-CU] c 37 N89-29750
- Gripping device  
[NASA-CASE-MS-C-21365-1] c 37 N90-20408
- Power saw  
[NASA-CASE-MS-C-21469-1] c 37 N90-26340
- Special purpose parallel computer architecture for real-time control and simulation in robotic applications  
[NASA-CASE-NPO-17629-1-CU] c 60 N90-27268

**ROBOTS**

- Optically controlled welding system  
[NASA-CASE-MFS-29291-1] c 37 N89-12868
- Robust high-performance control for robotic manipulators  
[NASA-CASE-NPO-17785-1-CU] c 37 N89-28846
- Distributed proximity sensor system  
[NASA-CASE-NPO-17275-1-CU] c 37 N89-29750
- Method and apparatus for positioning a robotic end effector  
[NASA-CASE-MS-C-21476-1] c 37 N90-17137
- Method and apparatus for configuration control of redundant robots  
[NASA-CASE-NPO-17801-1-CU] c 37 N90-27110

**ROBUSTNESS (MATHEMATICS)**

- Direct drive robotic hand  
[NASA-CASE-NPO-17917-1-CU] c 37 N90-26339

**ROCKET ENGINE CASES**

- Method of making a rocket motor casing Patent  
[NASA-CASE-XLE-00409] c 28 N71-15658
- Rocket motor casing Patent  
[NASA-CASE-XLE-05689] c 28 N71-15659
- Payload/burned-out motor case separation system Patent  
[NASA-CASE-XLA-05369] c 31 N71-15687

**ROCKET ENGINE DESIGN**

- Solid propellant liner Patent  
[NASA-CASE-XNP-09744] c 27 N71-16392
- Ion engine casing construction and method of making same Patent  
[NASA-CASE-XNP-06942] c 28 N71-23293
- Casting propellant in rocket engine  
[NASA-CASE-LAR-11895-1] c 28 N77-10213
- Solid propellant rocket motor and method of making same  
[NASA-CASE-XLA-01349] c 20 N77-17143

**ROCKET ENGINE CONTROL**

- Fluid thrust control system — for liquid propellant rocket engines  
[NASA-CASE-XMF-05964-1] c 20 N79-21124

**ROCKET ENGINE DESIGN**

- Annular rocket motor and nozzle configuration Patent  
[NASA-CASE-XLE-00078] c 28 N70-33284
- Spherical solid-propellant rocket motor Patent  
[NASA-CASE-XLA-00105] c 28 N70-33331
- Spherically-shaped rocket motor Patent  
[NASA-CASE-XHQ-01897] c 28 N70-35381
- Rocket engine Patent  
[NASA-CASE-XLE-00342] c 28 N70-37980

- Swirling flow nozzle Patent  
[NASA-CASE-XNP-03692] c 28 N71-24321
- Ion thruster with a combination keeper electrode and electron baffle  
[NASA-CASE-NPO-11880] c 28 N73-24783
- Supersonic-combustion rocket  
[NASA-CASE-LEW-11058-1] c 20 N74-13502
- Rocket chamber and method of making  
[NASA-CASE-LEW-11118-2] c 20 N76-14191
- System for imposing directional stability on a rocket-propelled vehicle  
[NASA-CASE-MFS-21311-1] c 20 N76-21275
- Dual-fuel, dual-mode rocket engine  
[NASA-CASE-LAR-13773-1] c 20 N90-19298

**ROCKET ENGINES**

- Channel-type shell construction for rocket engines and the like Patent  
[NASA-CASE-XLE-00144] c 28 N70-34860
- Ion thruster cathode Patent Application  
[NASA-CASE-LEW-10814-1] c 28 N70-35422
- Injector-valve device Patent  
[NASA-CASE-XLE-00303] c 15 N70-36535
- Elastic universal joint Patent  
[NASA-CASE-NPO-00416] c 15 N70-36947
- Passively regulated water electrolysis rocket engine Patent  
[NASA-CASE-XGS-08729] c 28 N71-14044
- Method of igniting solid propellants Patent  
[NASA-CASE-XLE-01988] c 27 N71-15634
- Laminar flow enhancement Patent  
[NASA-CASE-NPO-10122] c 12 N71-17631
- Swirling flow nozzle Patent  
[NASA-CASE-XNP-03692] c 28 N71-24321
- Thruster maintenance system Patent  
[NASA-CASE-MFS-20325] c 28 N71-27095
- Purge device for thrust engines Patent  
[NASA-CASE-XMS-04826] c 28 N71-28849
- Method and device for cooling Patent  
[NASA-CASE-HQN-00938] c 33 N71-29053
- Ion thruster magnetic field control  
[NASA-CASE-LEW-10835-1] c 28 N72-22771
- Altitude simulation chamber for rocket engine testing  
[NASA-CASE-MFS-20620] c 11 N72-27262
- Method of making apparatus for sensing temperature  
[NASA-CASE-XLE-05230-2] c 14 N73-13417
- Magneto-plasma-dynamic arc thruster  
[NASA-CASE-LEW-11180-1] c 25 N73-25760
- Method of electroforming a rocket chamber  
[NASA-CASE-LEW-11118-1] c 20 N74-32919
- Device for installing rocket engines  
[NASA-CASE-MFS-19220-1] c 20 N76-22296
- Ion beam thruster shield  
[NASA-CASE-LEW-12082-1] c 20 N77-10148
- Anode for ion thruster  
[NASA-CASE-LEW-12048-1] c 20 N77-20162
- General purpose rocket furnace  
[NASA-CASE-MFS-23460-1] c 12 N79-26075
- Diffuser/ejector system for a very high vacuum environment  
[NASA-CASE-MFS-25791-1] c 09 N84-27749
- Ring-cusp ion thruster with shell anode  
[NASA-CASE-LEW-13881-1] c 20 N85-21256
- Low loss injector for liquid propellant rocket engines  
[NASA-CASE-MFS-25989-1] c 20 N87-14420
- Emergency egress fixed rocket package  
[NASA-CASE-MS-C-21332-1] c 03 N89-11724
- Extended temperature range rocket injector  
[NASA-CASE-LEW-14846-1] c 20 N90-15130

**ROCKET EXHAUST**

- Thrust vector control apparatus Patent  
[NASA-CASE-XLE-00208] c 28 N70-34294
- Rocket thrust throttling system  
[NASA-CASE-LEW-10374-1] c 28 N73-13773
- Method and apparatus for suppressing ignition overpressure in solid rocket propulsion systems  
[NASA-CASE-MFS-25843-1] c 20 N83-17588
- Hybrid plume plasma rocket  
[NASA-CASE-MS-C-20476-2] c 20 N89-25279

**ROCKET FIRING**

- Alleviation of divergence during rocket launch Patent  
[NASA-CASE-XLA-00256] c 31 N71-15663

**ROCKET FLIGHT**

- Technique for control of free-flight rocket vehicles Patent  
[NASA-CASE-XLA-00937] c 31 N71-17691

**ROCKET LAUNCHING**

- Alleviation of divergence during rocket launch Patent  
[NASA-CASE-XLA-00256] c 31 N71-15663
- Controlled release device Patent  
[NASA-CASE-XKS-03338] c 15 N71-24043

**ROCKET LININGS**

- Heat exchanger and method of making — rocket lining  
[NASA-CASE-LEW-12441-2] c 34 N80-24573

## ROCKET NOZZLES

- Gimballed, partially submerged rocket nozzle Patent  
[NASA-CASE-XMF-01544] c 28 N70-34162
- Rocket thrust chamber Patent  
[NASA-CASE-XLE-00145] c 28 N70-36806
- Self-sealing, unbonded, rocket motor nozzle closure Patent  
[NASA-CASE-XLA-02651] c 28 N70-41967
- Automatically deploying nozzle exit cone extension Patent  
[NASA-CASE-XLE-01640] c 31 N71-15637
- Rocket nozzle test method Patent  
[NASA-CASE-NPO-10311] c 31 N71-15643
- Collapsible nozzle extension for rocket engines Patent  
[NASA-CASE-MFS-11497] c 28 N71-16224
- Apparatus and method for protecting a photographic device Patent  
[NASA-CASE-NPO-10174] c 14 N71-18465
- Multislit film cooled pyrolytic graphite rocket nozzle Patent  
[NASA-CASE-XNP-04389] c 28 N71-20942
- Prestressed refractory structure Patent  
[NASA-CASE-XNP-02888] c 18 N71-21068
- Swirling flow nozzle Patent  
[NASA-CASE-XNP-03692] c 28 N71-24321
- Method and device for cooling Patent  
[NASA-CASE-HQN-00938] c 33 N71-29053
- Inflatable transpiration cooled nozzle  
[NASA-CASE-MFS-20619] c 28 N72-11708
- Solid propellant rocket motor nozzle  
[NASA-CASE-NPO-11458] c 28 N72-23810
- Method of making a rocket nozzle  
[NASA-CASE-XMF-06884-1] c 20 N79-21123
- Retractable environmental seal  
[NASA-CASE-MFS-23646-1] c 37 N79-22474
- Nozzle fabrication technique  
[NASA-CASE-MS-03159-1] c 20 N88-24684
- Hybrid plume plasma rocket  
[NASA-CASE-MS-20476-2] c 20 N89-25279

## ROCKET OXIDIZERS

- Preparing oxidizer coated metal fuel particles  
[NASA-CASE-NPO-11975-1] c 28 N74-33209

## ROCKET PROPELLANTS

- Two-step rocket engine bipropellant valve Patent  
[NASA-CASE-XMS-04890-1] c 15 N70-22192
- Rocket engine injector Patent  
[NASA-CASE-XLE-03157] c 28 N71-24736
- Bipropellant injector  
[NASA-CASE-XNP-09461] c 28 N72-23809

## ROCKET TEST FACILITIES

- High-vacuum condenser tank for ion rocket tests Patent  
[NASA-CASE-XLE-00168] c 11 N70-33278
- Micro-pound extended range thrust stand Patent  
[NASA-CASE-GSC-10710-1] c 28 N71-27094

## ROCKET THRUST

- Apparatus and method for control of a solid fueled rocket vehicle Patent  
[NASA-CASE-XNP-00217] c 28 N70-38181
- Electrostatic thruster with improved insulators Patent  
[NASA-CASE-XLE-01902] c 28 N71-10574
- Solid propellant rocket motor  
[NASA-CASE-NPO-11559] c 28 N73-24784
- Thrust measurement  
[NASA-CASE-XMS-05731] c 35 N75-29382

## ROCKET VEHICLES

- Umbilical separator for rockets Patent  
[NASA-CASE-XNP-00425] c 11 N70-38202
- Support apparatus for dynamic testing Patent  
[NASA-CASE-XMF-01772] c 11 N70-41677
- Alleviation of divergence during rocket launch Patent  
[NASA-CASE-XLA-00256] c 31 N71-15663
- Technique for control of free-flight rocket vehicles Patent  
[NASA-CASE-XLA-00937] c 31 N71-17691
- Coupling device for moving vehicles  
[NASA-CASE-GSC-12322-1] c 37 N80-14398
- High acceleration cable deployment system  
[NASA-CASE-ARC-11256-1] c 15 N82-24272

## ROCKET-BORNE INSTRUMENTS

- Scanning aspect sensor employing an apertured disc and a commutator  
[NASA-CASE-XGS-08266] c 14 N69-27432

## ROCKETS

- Hydrogen fire detection system with logic circuit to analyze the spectrum of temporal variations of the optical spectrum  
[NASA-CASE-MFS-13130] c 10 N72-17173

## ROCKS

- Rock drill for recovering samples  
[NASA-CASE-XNP-07478] c 14 N69-21923
- Rock sampling — apparatus for controlling particle size  
[NASA-CASE-XNP-10007-1] c 46 N74-23068

- Rock sampling — method for controlling particle size distribution  
[NASA-CASE-XNP-09755] c 46 N74-23069
- Coal-rock interface detector  
[NASA-CASE-MFS-23725-1] c 43 N79-31706

## RODS

- Nuclear thermionic converter — tungsten-thorium oxide rods  
[NASA-CASE-NPO-13121-1] c 73 N77-18891
- Quasi-containerless glass formation method and apparatus  
[NASA-CASE-MFS-28090-1] c 27 N87-21111
- Lightning discharge protection rod  
[NASA-CASE-LAR-13470-1] c 03 N88-14083

## ROLL

- Roll alignment detector  
[NASA-CASE-GSC-10514-1] c 14 N72-20379

## ROLLER BEARINGS

- Method of lubricating rolling element bearings Patent  
[NASA-CASE-XLE-09527] c 15 N71-17688
- Semi-linear ball bearing Patent  
[NASA-CASE-XLA-02809] c 15 N71-22982
- Low mass rolling element for bearings  
[NASA-CASE-LEW-11087-1] c 15 N73-30458
- Method of making rolling element bearings  
[NASA-CASE-LEW-11087-2] c 37 N74-15128
- Bearing material — composite material with low friction surface for rolling or sliding contact  
[NASA-CASE-LEW-11930-1] c 24 N76-22309

## ROLLERS

- Method of improving the reliability of a rolling element system Patent  
[NASA-CASE-XLE-02999] c 15 N71-16052
- Load regulating latch  
[NASA-CASE-MS-19535-1] c 37 N77-32499
- Suspension system for a wheel rolling on a flat track — bearings for directional antennas  
[NASA-CASE-NPO-14395-1] c 37 N82-21587
- Fully articulated four-point-bend loading fixture  
[NASA-CASE-LEW-14776-1] c 37 N90-15445

## ROLLING CONTACT LOADS

- Rolling element bearings Patent  
[NASA-CASE-XLE-09527-2] c 15 N71-26189

## ROLLING MOMENTS

- Roll attitude star sensor system Patent  
[NASA-CASE-XNP-01307] c 21 N70-41856

## ROOM TEMPERATURE

- Coating process  
[NASA-CASE-XNP-06508] c 18 N69-39895

## ROTARY GYROSCOPES

- Closed loop fiber optic rotation sensor  
[NASA-CASE-NPO-16558-1-CU] c 74 N87-23259

## ROTARY STABILITY

- Reactance control system Patent  
[NASA-CASE-XMF-01598] c 21 N71-15583
- Two component bearing Patent  
[NASA-CASE-XLA-00013] c 15 N71-29136
- Lubricated journal bearing  
[NASA-CASE-LEW-11076-3] c 37 N75-30562

## Cyclical bi-directional rotary actuator

- [NASA-CASE-GSC-11883-1] c 37 N77-19458
- Family of airfoil shapes for rotating blades — for increased power efficiency and blade stability  
[NASA-CASE-LAR-12643-1] c 02 N84-11136

- Apparatus for and method of compensating dynamic unbalance  
[NASA-CASE-GSC-12550-1] c 37 N84-28082

- Dual motion valve with single motion input  
[NASA-CASE-MFS-28058-1] c 37 N87-21332

## ROTARY WING AIRCRAFT

- Aircraft control system  
[NASA-CASE-ERC-10439] c 02 N73-19004
- Swashplate control system  
[NASA-CASE-ARC-11633-1] c 08 N87-23631
- High lift, low pitching moment airfoils  
[NASA-CASE-LAR-13215-1] c 02 N89-14224

## ROTARY WINGS

- Variable geometry rotor system  
[NASA-CASE-LAR-10557] c 02 N72-11018
- Hingeless helicopter rotor with improved stability  
[NASA-CASE-ARC-10807-1] c 05 N77-17029
- Locking redundant link  
[NASA-CASE-LAR-11900-1] c 37 N79-14382
- Acoustically swept rotor — helicopter noise reduction  
[NASA-CASE-ARC-11106-1] c 05 N80-14107
- Compensating linkage for main rotor control  
[NASA-CASE-LAR-11797-1] c 05 N81-19087
- Family of airfoil shapes for rotating blades — for increased power efficiency and blade stability  
[NASA-CASE-LAR-12643-1] c 02 N84-11136
- Shapes for rotating airfoils  
[NASA-CASE-LAR-12396-1] c 02 N84-28732
- Helicopter anti-torque system using strakes  
[NASA-CASE-LAR-13233-1] c 05 N84-33400

## ROTATING BODIES

- Optical spin compensator  
[NASA-CASE-XGS-02401] c 14 N69-27485
- Laser apparatus for removing material from rotating objects Patent  
[NASA-CASE-MFS-11279] c 16 N71-20400
- Phase-locked servo system — for synchronizing the rotation of slip ring assembly  
[NASA-CASE-MFS-22073-1] c 33 N75-13139
- Annular momentum control device used for stabilization of space vehicles and the like  
[NASA-CASE-LAR-11051-1] c 15 N76-14158
- Axially and radially controllable magnetic bearing  
[NASA-CASE-GSC-11551-1] c 37 N76-18459
- Multiple in-line docking capability for rotating space stations  
[NASA-CASE-MFS-20855-1] c 15 N77-10112
- Rotatable mass for a flywheel  
[NASA-CASE-MFS-23051-1] c 37 N79-10422
- Acoustic driving of rotor  
[NASA-CASE-NPO-14005-1] c 71 N79-20827
- Multi-channel rotating optical interface for data transmission  
[NASA-CASE-NPO-14068-1] c 74 N79-34011
- Apparatus for and method of compensating dynamic unbalance  
[NASA-CASE-GSC-12550-1] c 37 N84-28082
- Airborne tracking sunphotometer apparatus and system  
[NASA-CASE-ARC-11822-1] c 44 N88-14492

## ROTATING CYLINDERS

- Tread drum for animals — having an electrical shock station  
[NASA-CASE-ARC-10917-1] c 51 N78-27733
- Head for high speed spinner having a vacuum chuck — holding silicon dioxide chips for etching  
[NASA-CASE-NPO-15227-1] c 37 N81-33482
- Non-backdrivable free wheeling coupling  
[NASA-CASE-MS-20475-1] c 37 N87-17037

## ROTATING DISKS

- Foil seal  
[NASA-CASE-XLE-05130] c 15 N69-21362
- Scanning aspect sensor employing an apertured disc and a commutator  
[NASA-CASE-XGS-08266] c 14 N69-27432
- Redundant disc  
[NASA-CASE-LEW-12496-1] c 07 N78-33101
- Spinning disk calibration method and apparatus for laser Doppler velocimeter  
[NASA-CASE-ARC-11510-1] c 35 N86-32697
- Electrostatically suspended rotor for angular encoder  
[NASA-CASE-MFS-28294-1] c 31 N90-10310

## ROTATING ELECTRICAL MACHINES

- Light intensity modulator controller Patent  
[NASA-CASE-XMS-04300] c 09 N71-19479
- Direct current motor with stationary armature and field Patent  
[NASA-CASE-XGS-05290] c 09 N71-25999
- Constant frequency output two stage induction machine systems Patent  
[NASA-CASE-ERC-10065] c 09 N71-27364

## ROTATING ENVIRONMENTS

- Radial module space station Patent  
[NASA-CASE-XMS-01806] c 31 N70-41373
- Rotating space station simulator Patent  
[NASA-CASE-XLA-03127] c 11 N71-10776

## ROTATING GENERATORS

- Rotating raster generator  
[NASA-CASE-FRC-10071-1] c 32 N74-20813
- Wind wheel electric power generator  
[NASA-CASE-MFS-23515-1] c 44 N80-21828

## ROTATING MIRRORS

- Retrodiffractive modulator Patent  
[NASA-CASE-GSC-10062] c 14 N71-15605
- Attitude sensor for space vehicles Patent  
[NASA-CASE-XLA-00793] c 21 N71-22880
- Method for generating ultra-precise angles Patent  
[NASA-CASE-XGS-04173] c 19 N71-26674
- Method and apparatus for optically monitoring the angular position of a rotating mirror  
[NASA-CASE-GSC-11353-1] c 74 N74-21304
- Multispectral glancing incidence X-ray telescope  
[NASA-CASE-MFS-28013-1] c 89 N86-22459

## ROTATING SHAFTS

- Foil seal Patent  
[NASA-CASE-XLE-05130-2] c 15 N71-19570
- Anemometer with braking mechanism Patent  
[NASA-CASE-XMF-05224] c 14 N71-23726
- Detenting servomotor Patent  
[NASA-CASE-XNP-06936] c 15 N71-24695
- Rotating shaft seal Patent  
[NASA-CASE-XNP-02862-1] c 15 N71-26294
- Two component bearing Patent  
[NASA-CASE-XLA-00013] c 15 N71-29136
- Hall effect transducer  
[NASA-CASE-LAR-10820-1] c 09 N72-25255

S

Spiral groove seal — for rotating shaft  
[NASA-CASE-XLE-10326-4] c 37 N74-15125  
Digital servo controller — for rotating antenna shaft  
[NASA-CASE-KSC-10769-1] c 33 N74-29556  
Solid medium thermal engine  
[NASA-CASE-ARC-10461-1] c 44 N74-33379  
Ergometer calibrator — for any ergometer utilizing rotating shaft  
[NASA-CASE-MFS-21045-1] c 35 N75-15932  
Fluid seal for rotating shafts  
[NASA-CASE-LEW-11676-1] c 37 N76-22541  
Cyclical bi-directional rotary actuator  
[NASA-CASE-GSC-11883-1] c 37 N77-19458  
Tachometer  
[NASA-CASE-MFS-23175-1] c 35 N77-30436  
Rotary leveling base platform  
[NASA-CASE-ARC-10981-1] c 37 N78-27425  
Rotary electric device  
[NASA-CASE-GSC-12138-1] c 33 N79-20314  
Circumferential shaft seal  
[NASA-CASE-LEW-12119-1] c 37 N80-28711  
Multiple plate hydrostatic viscous damper  
[NASA-CASE-LEW-12445-1] c 37 N81-22360  
Clutchless multiple drive source for output shaft  
[NASA-CASE-ARC-11325-1] c 37 N82-22496  
Resilient seal ring assembly with spring means applying force to wedge member — cryogenic applications  
[NASA-CASE-MFS-25678-1] c 37 N84-11497  
Vertical shaft windmill  
[NASA-CASE-LAR-12923-1] c 37 N84-12493  
Directional gear ratio transmissions  
[NASA-CASE-LAR-12644-1] c 37 N84-28084  
Variable force, eddy-current or magnetic damper  
[NASA-CASE-LEW-13717-1] c 37 N85-30333  
Rotary stepping device with memory metal actuator  
[NASA-CASE-NPO-15482-1] c 37 N87-23970  
Rotary control lock  
[NASA-CASE-NPO-17453-1-CU] c 37 N89-13787  
Cryogenic anti-friction bearing with inner race  
[NASA-CASE-MFS-28384-1] c 37 N90-27112

**ROTATION**  
Semi-linear ball bearing Patent  
[NASA-CASE-XLA-02809] c 15 N71-22982  
Mechanical actuator Patent  
[NASA-CASE-XGS-04548] c 15 N71-24045  
Positioning mechanism  
[NASA-CASE-NPO-10679] c 15 N72-21462  
Spray coating apparatus having a rotatable workpiece holder  
[NASA-CASE-ARC-11110-1] c 37 N82-24492  
System for controlled acoustic rotation of objects  
[NASA-CASE-NPO-15522-1] c 71 N83-32516  
Acoustic rotation control  
[NASA-CASE-NPO-15689-1] c 71 N84-23233  
Improved docking alignment system  
[NASA-CASE-MSC-21372-1] c 35 N89-12842  
Rotary control lock  
[NASA-CASE-NPO-17453-1-CU] c 37 N89-13787  
Controlled sample orientation and rotation in an acoustic levitator  
[NASA-CASE-NPO-17086-1-CU] c 35 N89-14422  
Hollow fiber clinostat: Technical abstract  
[NASA-CASE-MFS-28370-1] c 35 N89-28793  
Acoustic controlled rotation and orientation  
[NASA-CASE-NPO-16995-1-CU] c 71 N90-12289  
Apparatus for mixing solutions in low gravity environments  
[NASA-CASE-MFS-26047-1] c 29 N90-21209  
Atmospheric autorotating imaging device  
[NASA-CASE-NPO-17390-1-CU] c 35 N90-22769  
Rotating-unbalanced-mass devices and methods for scanning balloon-borne-experiments, free-flying spacecraft, and space shuttle/space station attached experiments  
[NASA-CASE-MFS-28425-1] c 35 N90-26304  
Rotationally actuated prosthetic helping hand  
[NASA-CASE-MFS-28426-1] c 54 N90-27261

**ROTOR AERODYNAMICS**  
Acoustically swept rotor — helicopter noise reduction  
[NASA-CASE-ARC-11106-1] c 05 N80-14107

**ROTOR BLADES**  
Non-destructive method for applying and removing instrumentation on helicopter rotor blades  
[NASA-CASE-LAR-11201-1] c 35 N78-24515  
Apparatus and method for reducing thermal stress in a turbine rotor  
[NASA-CASE-LEW-12232-1] c 07 N79-10057

**ROTOR BLADES (TURBOMACHINERY)**  
Locking device for turbine rotor blades Patent  
[NASA-CASE-XNP-00816] c 28 N71-28928  
Turbo-machine blade vibration damper Patent  
[NASA-CASE-XLE-00155] c 28 N71-29154  
Apparatus for welding blades to rotors  
[NASA-CASE-LEW-10533-2] c 37 N74-11300

Supersonic fan blading — noise reduction in turbofan engines  
[NASA-CASE-LEW-11402-1] c 07 N74-28226  
Blade retainer assembly  
[NASA-CASE-LEW-12608-1] c 07 N77-27116  
Platform for a swing root turbomachinery blade  
[NASA-CASE-LEW-12312-1] c 07 N77-32148  
Tip cap for a rotor blade  
[NASA-CASE-LEW-13654-1] c 07 N84-22560  
Shapes for rotating airfoils  
[NASA-CASE-LAR-12396-1] c 02 N84-28732

**ROTOR LIFT**  
Constant lift rotor for a heavier than air craft  
[NASA-CASE-ARC-11045-1] c 05 N79-17847

**ROTOR SPEED**  
Brushless direct current tachometer Patent  
[NASA-CASE-MFS-20385] c 09 N71-24904

**ROTORCRAFT AIRCRAFT**  
Constant lift rotor for a heavier than air craft  
[NASA-CASE-ARC-11045-1] c 05 N79-17847

**ROTORS**  
Multistage multiple-reentry turbine Patent  
[NASA-CASE-XLE-00085] c 28 N70-39895  
Angular position and velocity sensing apparatus Patent  
[NASA-CASE-XGS-05680] c 14 N71-17585  
Indexing microwave switch Patent  
[NASA-CASE-XNP-06507] c 09 N71-23548  
Detenting servomotor Patent  
[NASA-CASE-XNP-06936] c 15 N71-24695  
Rotary vane attenuator wherein rotor has orthogonally disposed resistive and dielectric cards  
[NASA-CASE-NPO-11418-1] c 14 N73-13420  
Welding blades to rotors  
[NASA-CASE-LEW-10533-1] c 15 N73-28515  
Magnetic field control — electromechanical torquing device  
[NASA-CASE-MFS-23828-1] c 33 N82-26569  
Damping seal for turbomachinery  
[NASA-CASE-MFS-25842-2] c 37 N86-20788  
Swashplate control system  
[NASA-CASE-ARC-11633-1] c 08 N87-23631  
Turbomachinery rotor support with damping  
[NASA-CASE-MFS-28345-1] c 37 N89-28841

**RUBBER**  
Thermoplastic rubber comprising ethylene-vinyl acetate copolymer, asphalt and fluxing oil  
[NASA-CASE-NPO-08835-1] c 27 N78-33228  
Formulated plastic separators for soluble electrode cells — rubber-ion transport membranes  
[NASA-CASE-LEW-12358-1] c 44 N79-17313  
Enhancement of in vitro guayule propagation  
[NASA-CASE-NPO-15213-1] c 51 N83-17045

**RUBBER COATINGS**  
Intumescent paint containing nitrile rubber  
[NASA-CASE-ARC-10196-1] c 18 N73-13562

**RUBY**  
Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-1] c 37 N75-15992  
Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-3] c 24 N79-25143

**RUBY LASERS**  
Laser coolant and ultraviolet filter  
[NASA-CASE-MFS-20180] c 16 N72-12440

**RUNWAY ALIGNMENT**  
Magnetic position detection method and apparatus  
[NASA-CASE-ARC-10179-1] c 21 N72-22619

**RUNWAY CONDITIONS**  
Airplane runway performance monitoring system  
[NASA-CASE-LAR-13854-1-CU] c 04 N88-24621  
Warm fog dissipation using large volume water sprays  
[NASA-CASE-MFS-25962-1] c 09 N89-25242

**RUNWAY LIGHTS**  
Runway light Patent  
[NASA-CASE-XLA-00119] c 11 N70-33329  
Spectrally balanced chromatic landing approach lighting system  
[NASA-CASE-ARC-10990-1] c 04 N82-16059

**RUNWAYS**  
Airplane runway performance monitoring system  
[NASA-CASE-LAR-13854-1-CU] c 04 N88-24621  
Warm fog dissipation using large volume water sprays  
[NASA-CASE-MFS-25962-1] c 09 N89-25242

**RUPTURING**  
Means for controlling rupture of shock tube diaphragms Patent  
[NASA-CASE-XAC-00731] c 11 N71-15960  
Fully articulated four-point-bend loading fixture  
[NASA-CASE-LEW-14776-1] c 37 N90-15445

SABOT PROJECTILES

Hypervelocity gun — using both electric and chemical energy for projectile propulsion  
[NASA-CASE-XLE-03186-1] c 09 N79-21084

SAFETY

Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-3] c 27 N84-22745

SAFETY DEVICES

Pressure suit tie-down mechanism Patent  
[NASA-CASE-XMS-00784] c 05 N71-12335  
Positive locking check valve Patent  
[NASA-CASE-XMS-09310] c 15 N71-22706  
Protective device for machine and metalworking tools Patent  
[NASA-CASE-XLE-01092] c 15 N71-22797  
Velocity limiting safety system Patent  
[NASA-CASE-XLA-07473] c 15 N71-24895  
Combustion products generating and metering device  
[NASA-CASE-GSC-11095-1] c 14 N72-10375  
Restraint torso for a pressurized suit  
[NASA-CASE-MSC-12397-1] c 05 N72-25119  
Totally confined explosive welding — apparatus to reduce noise level and protect personnel during explosive bonding  
[NASA-CASE-LAR-10941-1] c 37 N74-21057  
Deployable flexible ventral fins for use as an emergency spin recovery device in aircraft  
[NASA-CASE-LAR-10753-1] c 08 N74-30421  
Shoulder harness and lap belt restraint system  
[NASA-CASE-ARC-10519-2] c 05 N75-25915  
Fifth wheel  
[NASA-CASE-FRC-10081-1] c 37 N77-14477  
Microwave power transmission beam safety system  
[NASA-CASE-NPO-14224-1] c 33 N80-18287  
Safety shield for vacuum/pressure chamber viewing port  
[NASA-CASE-GSC-12513-1] c 31 N81-19343  
Self-locking double retention redundant full pin release  
[NASA-CASE-NPO-16233-1] c 37 N86-20801  
Variable response load limiting device  
[NASA-CASE-LAR-12801-1] c 37 N88-23982  
Timing control system  
[NASA-CASE-NPO-16882-1-CU] c 33 N88-24863

SAFETY FACTORS

Safety flywheel — using flexible materials energy storage  
[NASA-CASE-HQN-10888-1] c 44 N79-14527

SAMA EQUATIONS

Cosmic dust analyzer  
[NASA-CASE-MSC-13802-2] c 35 N76-15431

SALT BATHS

Process for applying a protective coating for salt bath brazing Patent  
[NASA-CASE-XLE-00046] c 15 N70-33311

SAMARIUM

Gd or Sm doped silicon semiconductor composition Patent  
[NASA-CASE-XLE-10715] c 26 N71-23292

SAMPLERS

Vacuum probe surface sampler  
[NASA-CASE-LAR-10623-1] c 14 N73-30395  
Automated syringe sampler — remote sampling of air and water  
[NASA-CASE-LAR-12308-1] c 35 N81-29407

SAMPLES

Plural output optometric sample cell and analysis system  
[NASA-CASE-NPO-10233-1] c 74 N78-33913  
Mobile sampler for use in acquiring samples of terrestrial atmospheric gases  
[NASA-CASE-NPO-15220-1] c 45 N83-25217

SAMPLING

Sample collecting impact bit Patent  
[NASA-CASE-XNP-01412] c 15 N70-42034  
Fluid sample collector Patent  
[NASA-CASE-XMS-06767-1] c 14 N71-20435  
Atmospheric sampling devices  
[NASA-CASE-NPO-11373] c 13 N72-25323  
Digital to analog conversion apparatus  
[NASA-CASE-MSC-12458-1] c 08 N73-32081  
Rock sampling — apparatus for controlling particle size  
[NASA-CASE-XNP-10007-1] c 46 N74-23068  
Rock sampling — method for controlling particle size distribution  
[NASA-CASE-XNP-09755] c 46 N74-23069  
Apparatus for microbiological sampling — including automatic swabbing  
[NASA-CASE-LAR-11069-1] c 35 N75-12272  
Automatic biowaste sampling  
[NASA-CASE-MSC-14640-1] c 54 N76-14804  
Remote water monitoring system  
[NASA-CASE-LAR-11973-1] c 35 N78-27384

- Fluid sample collection and distribution system --- qualitative analysis of aqueous samples from several points  
[NASA-CASE-MSC-16841-1] c 34 N79-24285
- Method for detecting coliform organisms  
[NASA-CASE-ARC-11322-1] c 51 N83-28849
- Moisture content and gas sampling device  
[NASA-CASE-MSC-18866-1] c 35 N85-29213
- Optical multiple sample vacuum integrating sphere  
[NASA-CASE-GSC-12849-1] c 74 N86-26190
- Solid sorbent air sampler  
[NASA-CASE-MSC-20653-1] c 35 N86-26595
- Digital carrier demodulator employing components working beyond normal limits  
[NASA-CASE-NPO-17628-1-CU] c 32 N89-28684
- Method and apparatus for determining time, direction and composition of impacting space particles  
[NASA-CASE-LAR-13392-1-CU] c 19 N90-10132
- High-pressure promoted combustion chamber  
[NASA-CASE-MSC-21470-1] c 09 N90-16771
- SANDWICH STRUCTURES**
- Sandwich panel construction Patent  
[NASA-CASE-XLA-00349] c 33 N70-37979
- Micrometeoroid velocity measuring device Patent  
[NASA-CASE-XLA-00495] c 14 N70-41332
- Meteoroid sensing apparatus having a coincidence network connected to a pair of capacitors Patent  
[NASA-CASE-XLE-01246] c 14 N71-10797
- Method of making inflatable honeycomb Patent  
[NASA-CASE-XLA-03492] c 15 N71-22713
- Convoluting device for forming convolutions and the like Patent  
[NASA-CASE-XNP-05297] c 15 N71-23811
- Composite sandwich lattice structure  
[NASA-CASE-LAR-11898-1] c 24 N78-10214
- Low density bismaleimide-carbon microballoon composites  
[NASA-CASE-ARC-11040-1] c 24 N79-16915
- Superplastically formed diffusion bonded metallic structure  
[NASA-CASE-FRC-11026-1] c 24 N82-24296
- Multilayer thermal protection system  
[NASA-CASE-LAR-12620-1] c 24 N82-32417
- New core design for use with precision composite reflectors  
[NASA-CASE-NPO-17858-1-CU] c 24 N90-26880
- SAPPHIRE**
- Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-1] c 37 N75-15992
- Bonding of sapphire to sapphire by eutectic mixture of aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-3] c 24 N79-25143
- SATELLITE ANTENNAS**
- Antenna system using parasitic elements and two driven elements at 90 deg angle fed 180 deg out of phase Patent  
[NASA-CASE-XLA-00414] c 07 N70-38200
- Apparatus providing a directive field pattern and attitude sensing of a spin stabilized satellite Patent  
[NASA-CASE-XGS-02607] c 31 N71-23009
- Apparatus and method for determining the position of a radiant energy source  
[NASA-CASE-GSC-12147-1] c 32 N81-27341
- Microwave switching power divider --- antenna feeds  
[NASA-CASE-GSC-12420-1] c 33 N82-16340
- Antenna surface contour control system  
[NASA-CASE-LAR-13798-1] c 32 N89-25363
- SATELLITE ATTITUDE CONTROL**
- Photosensitive device to detect bearing deviation Patent  
[NASA-CASE-XNP-00438] c 21 N70-35089
- Attitude control for spacecraft Patent  
[NASA-CASE-XNP-02982] c 31 N70-41855
- Satellite despinn device Patent  
[NASA-CASE-XMF-08523] c 31 N71-20396
- Attitude control and damping system for spacecraft Patent  
[NASA-CASE-XLA-02551] c 21 N71-21708
- Gravity gradient attitude control system Patent  
[NASA-CASE-GSC-10555-1] c 21 N71-27324
- Spacecraft attitude control method and apparatus  
[NASA-CASE-HQN-10439] c 21 N72-21624
- Dual purpose momentum wheels for spacecraft with magnetic recording  
[NASA-CASE-NPO-11481] c 21 N73-13644
- Combination automatic-starting electrical plasma torch and gas shutoff valve --- for satellite attitude control  
[NASA-CASE-XLE-10717] c 37 N75-29426
- Attitude control system  
[NASA-CASE-MFS-22787-1] c 15 N77-10113
- Rim inertial measuring system  
[NASA-CASE-LAR-12052-1] c 18 N81-29152
- SATELLITE COMMUNICATION**
- Satellite communication system and method Patent  
[NASA-CASE-GSC-10118-1] c 07 N71-24621
- Satellite communication system Patent  
[NASA-CASE-XNP-02389] c 07 N71-28900
- Ground plane interference elimination by passive element  
[NASA-CASE-NPO-16632-1-CU] c 32 N87-15390
- SATELLITE CONTROL**
- Stabilization of gravity oriented satellites Patent  
[NASA-CASE-XAC-01591] c 31 N71-17729
- Fluid-loop reaction system  
[NASA-CASE-NPO-17204-1-CU] c 34 N90-26292
- SATELLITE DESIGN**
- Inflation system for balloon type satellites Patent  
[NASA-CASE-XGS-03351] c 31 N71-16081
- SATELLITE INSTRUMENTS**
- Reaction wheel scanner Patent  
[NASA-CASE-XGS-02629] c 14 N71-21082
- SATELLITE NETWORKS**
- Satellite interface synchronization system  
[NASA-CASE-GSC-10390-1] c 07 N72-11149
- SATELLITE OBSERVATION**
- Method and apparatus for Delta Kappa synthetic aperture radar measurement of ocean current  
[NASA-CASE-NPO-15704-1] c 32 N85-34327
- SATELLITE ORBITS**
- Apparatus for changing the orientation and velocity of a spinning body traversing a path Patent  
[NASA-CASE-HQN-00936] c 31 N71-29050
- SATELLITE ORIENTATION**
- Method and apparatus for determining satellite orientation utilizing spatial energy sources Patent  
[NASA-CASE-XGS-00466] c 21 N70-34297
- Cartwheel satellite synchronization system Patent  
[NASA-CASE-XGS-05579] c 31 N71-15676
- Apparatus for changing the orientation and velocity of a spinning body traversing a path Patent  
[NASA-CASE-HQN-00936] c 31 N71-29050
- Analog spatial maneuver computer  
[NASA-CASE-GSC-10880-1] c 08 N72-11172
- SATELLITE PERTURBATION**
- Method and means for damping nutation in a satellite Patent  
[NASA-CASE-XMF-00442] c 31 N71-10747
- SATELLITE POWER TRANSMISSION**
- Microwave power transmission beam safety system  
[NASA-CASE-NPO-14224-1] c 33 N80-18287
- SATELLITE ROTATION**
- Optical spin compensator  
[NASA-CASE-XGS-02401] c 14 N69-27485
- Stretch de-spin mechanism Patent  
[NASA-CASE-XGS-00619] c 30 N70-40016
- Apparatus for changing the orientation and velocity of a spinning body traversing a path Patent  
[NASA-CASE-HQN-00936] c 31 N71-29050
- Magnetic spin reduction system for free spinning objects  
[NASA-CASE-MFS-25966-1] c 16 N86-26352
- SATELLITE TELEVISION**
- Adaptive system and method for signal generation Patent  
[NASA-CASE-GSC-11367] c 10 N71-26374
- SATELLITE TRACKING**
- Tracking receiver Patent  
[NASA-CASE-XGS-08679] c 10 N71-21473
- Simultaneous acquisition of tracking data from two stations  
[NASA-CASE-NPO-13292-1] c 32 N75-15854
- Switchable beamwidth monopulse method and system  
[NASA-CASE-GSC-11924-1] c 33 N76-27472
- SATELLITE TRANSMISSION**
- Asynchronous, multiplexing, single line transmission and recovery data system --- for satellite use  
[NASA-CASE-NPO-13321-1] c 32 N75-26195
- SATELLITE-BORNE INSTRUMENTS**
- Method of measuring sea surface water temperature with a satellite including wideband passive synthetic-aperture multichannel receiver  
[NASA-CASE-NPO-15651-1] c 43 N85-21723
- SATELLITE-BORNE PHOTOGRAPHY**
- Rotary solenoid shutter drive assembly and rotary inertia damper and stop plate assembly --- for use with cameras mounted in satellites  
[NASA-CASE-GSC-11560-1] c 33 N74-20861
- Scanner --- photography from a spin stabilized synchronous satellite  
[NASA-CASE-GSC-12032-2] c 43 N82-13465
- SATURABLE REACTORS**
- Pulse switching for high energy lasers  
[NASA-CASE-NPO-14556-1] c 33 N82-24418
- Low power consumption current transducer  
[NASA-CASE-NPO-16888-1-CU] c 33 N89-29681
- SATURATION**
- Method of detecting impending saturation of magnetic cores  
[NASA-CASE-ERC-10089] c 23 N72-17747
- SAWS**
- Ingot slicing machine and method  
[NASA-CASE-NPO-15483-1] c 37 N85-21650
- SAWTOOTH WAVEFORMS**
- Linear sawtooth voltage-wave generator employing transistor timing circuit having capacitor-zener diode combination feedback Patent  
[NASA-CASE-XMS-01315] c 09 N70-41675
- SCANNERS**
- Monopulse system with an electronic scanner  
[NASA-CASE-XGS-05582] c 07 N69-27460
- Electronic background suppression method and apparatus for a field scanning sensor  
[NASA-CASE-XGS-05211] c 07 N69-39980
- Method and means for an improved electron beam scanning system Patent  
[NASA-CASE-ERC-10552] c 09 N71-12539
- Reaction wheel scanner Patent  
[NASA-CASE-XGS-02629] c 14 N71-21082
- Electronic scanning of 2-channel monopulse patterns Patent  
[NASA-CASE-GSC-10299-1] c 09 N71-24804
- Method and apparatus for mapping the sensitivity of the face of a photodetector specifically a PMT  
[NASA-CASE-LAR-10320-1] c 09 N72-23172
- Ultrasonic scanner for radial and flat panels  
[NASA-CASE-MFS-20335-1] c 35 N74-10415
- Apparatus for scanning the surface of a cylindrical body  
[NASA-CASE-NPO-11861-1] c 36 N74-20009
- Fast scan control for deflection type mass spectrometers  
[NASA-CASE-LAR-11428-1] c 35 N74-34857
- Electronically scanned pressure sensor module with in situ calibration capability  
[NASA-CASE-LAR-12230-1] c 35 N79-14347
- Scannable beam forming interferometer antenna array system  
[NASA-CASE-GSC-12365-1] c 32 N80-28578
- Scanner --- photography from a spin stabilized synchronous satellite  
[NASA-CASE-GSC-12032-2] c 43 N82-13465
- Optical crystal temperature gauge with fiber optic connections  
[NASA-CASE-MSC-18627-1] c 74 N82-30071
- Scanning seismic intrusion detection method and apparatus --- monitoring unwanted subterranean entry and departure  
[NASA-CASE-ARC-11317-1] c 35 N83-34272
- Self-correcting electronically scanned pressure sensor  
[NASA-CASE-LAR-12686-1] c 35 N84-14491
- Two-dimensional scanner apparatus --- flaw detector in small flat plates  
[NASA-CASE-MFS-25687-1] c 35 N84-22928
- Electronic scanning pressure measuring system and transducer package  
[NASA-CASE-ARC-11361-1] c 35 N84-22934
- Programmable scan/read circuitry for charge coupled device imaging detectors --- spacecraft attitude control and star trackers  
[NASA-CASE-NPO-15345-1] c 74 N84-23247
- Atmospheric autorotating imaging device  
[NASA-CASE-NPO-17390-1-CU] c 35 N90-22769
- SCANNING**
- Television signal scan rate conversion system Patent  
[NASA-CASE-XMS-07168] c 07 N71-11300
- Method of erasing target material of a vidicon tube or the like Patent  
[NASA-CASE-XNP-06028] c 09 N71-23189
- Position determination systems --- using orbital antenna scan of celestial bodies  
[NASA-CASE-MSC-12593-1] c 17 N76-21250
- Magnetometer with a miniature transducer and automatic scanning  
[NASA-CASE-LAR-11617-2] c 35 N78-32397
- System and method for character recognition  
[NASA-CASE-NPO-11337-1] c 74 N81-18986
- SCATTERING CROSS SECTIONS**
- Method and means for helium/hydrogen ratio measurement by alpha scattering  
[NASA-CASE-NPO-14079-1] c 25 N80-20334
- Method and apparatus for sensor fusion  
[NASA-CASE-MSC-21334-1] c 32 N89-25360
- SCENE ANALYSIS**
- Simulator scene display evaluation device  
[NASA-CASE-ARC-11504-1] c 09 N86-32447
- SCHLIEREN PHOTOGRAPHY**
- System and method for obtaining wide screen Schlieren photographs  
[NASA-CASE-NPO-14174-1] c 74 N79-20856
- SCHMIDT CAMERAS**
- Cooled echelle grating spectrometer --- for space telescope applications  
[NASA-CASE-NPO-14372-1] c 35 N80-26635

## SCHMIDT TELESCOPES

Dual aperture multispectral Schmidt objective  
[NASA-CASE-GSC-12756-1] c 74 N84-23248

## SCHOOLS

Silent emergency alarm system for schools and the like  
[NASA-CASE-NPO-11307-1] c 10 N73-30205

## SCHOTTKY DIODES

High voltage, high current Schottky barrier solar cell  
[NASA-CASE-NPO-13482-1] c 44 N78-13526  
Solar cells having integral collector grids  
[NASA-CASE-LEW-12819-1] c 44 N79-11467  
Back wall solar cell  
[NASA-CASE-LEW-12236-2] c 44 N79-14528  
Schottky barrier solar cell  
[NASA-CASE-NPO-13689-2] c 44 N81-29525  
Method of fabricating Schottky Barrier solar cell  
[NASA-CASE-NPO-13689-4] c 44 N82-28780  
Thin wire pointing method  
[NASA-CASE-NPO-15789-1] c 31 N83-19947  
Epitaxial thinning process  
[NASA-CASE-NPO-15786-1] c 76 N84-35112  
GaAs Schottky barrier photo-responsive device and method of fabrication  
[NASA-CASE-GSC-12816-1] c 76 N86-20150  
Laterally stacked Schottky diodes for infrared sensor applications  
[NASA-CASE-NPO-17426-1-CU] c 33 N90-10329

## SCOOPS

Aeroflexible structures  
[NASA-CASE-XLA-06095] c 01 N69-39981

## SCORING

Scriber for silicon wafers  
[NASA-CASE-NPO-15539-1] c 37 N82-11469

## SCRAMBLING (COMMUNICATION)

Random digital encryption secure communication system  
[NASA-CASE-MSC-16462-1] c 32 N82-31583

## SCREWS

Electromechanical control actuator system Patent  
[NASA-CASE-ERC-10022] c 15 N71-26635  
Adjustable support  
[NASA-CASE-NPO-10721] c 15 N72-27484  
Low noise lead screw positioner  
[NASA-CASE-NPO-15617-1] c 35 N87-21304

## SCRUBBERS

High pressure gas filter system Patent  
[NASA-CASE-MFS-12806] c 14 N71-17588  
Nebulization reflux concentrator  
[NASA-CASE-LAR-13254-1CU] c 35 N86-29174

## SEA ICE

A technique for breaking ice in the path of a ship  
[NASA-CASE-LAR-10815-1] c 16 N72-22520

## SEA STATES

Oceanic wave measurement system  
[NASA-CASE-MFS-23862-1] c 48 N80-18667

## SEA SURFACE TEMPERATURE

Method of measuring sea surface water temperature with a satellite including wideband passive synthetic-aperture multichannel receiver  
[NASA-CASE-NPO-15651-1] c 43 N85-21723

## SEALERS

Pressure garment joint Patent  
[NASA-CASE-XMS-09836] c 05 N71-12344  
Sealing device for an electrochemical cell Patent  
[NASA-CASE-XGS-02630] c 03 N71-22974  
Bonded elastomeric seal for electrochemical cells Patent  
[NASA-CASE-XGS-02631] c 03 N71-23006  
Self-lubricating fluoride metal composite materials Patent  
[NASA-CASE-XLE-08511] c 18 N71-23710  
Polyimides of ether-linked aryl tetracarboxylic dianhydrides  
[NASA-CASE-MFS-22355-1] c 23 N76-15268  
High performance channel injection sealant invention abstract  
[NASA-CASE-ARC-14408-1] c 27 N82-33523

## SEALING

Foil seal  
[NASA-CASE-XLE-05130] c 15 N69-21362  
Sealed battery gas manifold construction Patent  
[NASA-CASE-XNP-03378] c 03 N71-11051  
Sealing device for an electrochemical cell Patent  
[NASA-CASE-XGS-02630] c 03 N71-22974  
Sealing member and combination thereof and method of producing said sealing member Patent  
[NASA-CASE-XMS-01625] c 15 N71-23022  
Evacuation port seal Patent  
[NASA-CASE-XMF-03290] c 15 N71-23256  
Valve seat  
[NASA-CASE-NPO-10606] c 15 N72-25451  
Ampoule sealing apparatus and process --- for housing a semiconductor growth charge under vacuum  
[NASA-CASE-LAR-12847-1] c 33 N83-16633

Optical pressure sealing coupling apparatus  
[NASA-CASE-MFS-29348-1] c 74 N89-25689  
O-ring gasket test fixture  
[NASA-CASE-MFS-28376-1] c 14 N89-28546  
High temperature, flexible, thermal barrier seal  
[NASA-CASE-LEW-14672-1] c 37 N90-15444  
High temperature flexible seal  
[NASA-CASE-LEW-14695-1] c 37 N90-23751

## SEALS (STOPPERS)

Spacecraft battery seals  
[NASA-CASE-XGS-03864] c 15 N69-24320  
Flexible seal for valves Patent  
[NASA-CASE-XLE-00101] c 15 N70-33376  
Shrink-fit gas valve Patent  
[NASA-CASE-XGS-00587] c 15 N70-35087  
Thin-walled pressure vessel Patent  
[NASA-CASE-XLE-04677] c 15 N71-10577  
Foil seal Patent  
[NASA-CASE-XLE-05130-2] c 15 N71-19570  
Storage container for electronic devices Patent  
[NASA-CASE-MFS-20075] c 09 N71-26133  
Rotating shaft seal Patent  
[NASA-CASE-XNP-02862-1] c 15 N71-26294  
Spiral groove seal --- for rotating shaft  
[NASA-CASE-XLE-10326-4] c 37 N74-15125  
Glass-to-metal seals comprising relatively high expansion metals  
[NASA-CASE-LEW-10698-1] c 37 N74-21063  
High speed, self-acting shaft seal --- for use in turbine engines  
[NASA-CASE-LEW-11274-1] c 37 N75-21631  
Method of forming shrink-fit compression seal  
[NASA-CASE-LAR-11563-1] c 37 N77-23482  
Counter pumping debris excluder and separator --- gas turbine shaft seals  
[NASA-CASE-LEW-11855-1] c 07 N78-25090  
Composite seal for turbomachinery --- backings for turbine engine shrouds  
[NASA-CASE-LEW-12131-1] c 37 N79-18318  
Retractable environmental seal  
[NASA-CASE-MFS-23646-1] c 37 N79-22474  
Shaft seal assembly for high speed and high pressure applications  
[NASA-CASE-LEW-11873-1] c 37 N79-22475  
Fluid pressure balanced seal  
[NASA-CASE-XGS-01286-1] c 37 N79-33469  
Gas path seal  
[NASA-CASE-NPO-12131-3] c 37 N80-18400  
Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-2] c 37 N80-26658  
Circumferential shaft seal  
[NASA-CASE-LEW-12119-1] c 37 N80-28711  
Thermal barrier pressure seal --- shielding junctions between spacecraft control surfaces and structures  
[NASA-CASE-MSC-18134-1] c 37 N81-15363  
Modified face seal for positive film stiffness  
[NASA-CASE-LEW-12989-1] c 37 N82-12442  
Surface conforming thermal/pressure seal --- tail assemblies of space shuttle orbiters  
[NASA-CASE-MSC-18422-1] c 37 N82-16408  
Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-3] c 37 N82-19540  
Continuous self-locking spiral wound seal --- for maintaining pressure between chambers in cryogenic wind tunnels  
[NASA-CASE-LAR-12315-1] c 37 N82-24490  
Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-12368-2] c 37 N82-26674  
Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-12368-1] c 27 N82-29453  
Process for preparing perfluorotriazine elastomers and precursors thereof  
[NASA-CASE-ARC-11402-1] c 27 N84-22744  
Method of fabricating an abrasible gas path seal  
[NASA-CASE-LEW-12369-2] c 37 N84-22957  
Damping seal for turbomachinery  
[NASA-CASE-MFS-25842-2] c 37 N86-20788  
Dual motion valve with single motion input  
[NASA-CASE-MFS-28058-1] c 37 N87-21332  
Thermal stress minimized, two component, turbine shroud seal  
[NASA-CASE-LEW-14212-1] c 37 N88-23978  
Quick-disconnect inflatable seal assembly  
[NASA-CASE-KSC-11368-1] c 37 N89-13786  
Turbomachinery rotor support with damping  
[NASA-CASE-MFS-28345-1] c 37 N89-28841  
Polycarbonate article with chemical resistant coating  
[NASA-CASE-MSC-21503-1] c 27 N90-16925  
High temperature flexible seal  
[NASA-CASE-LEW-14695-1] c 37 N90-23751

## SEAMS (JOINTS)

Traveling sealer for contoured table Patent  
[NASA-CASE-XLA-01494] c 15 N71-24164

Omnidirectional joint Patent  
[NASA-CASE-XMS-09835] c 05 N71-24623  
Method of making pressure tight seal for super alloy  
[NASA-CASE-LAR-10170-1] c 37 N74-11301

## SEAT BELTS

Shoulder harness and lap belt restraint system  
[NASA-CASE-ARC-10519-2] c 05 N75-25915

## SEATS

Seat cushion to provide realistic acceleration cues to aircraft simulator pilot  
[NASA-CASE-LAR-12149-2] c 09 N79-31228  
Fire blocking systems for aircraft seat cushions  
[NASA-CASE-ARC-11423-1] c 03 N84-33394  
Segmented tubular cushion springs and spring assembly  
[NASA-CASE-ARC-11349-1] c 37 N86-20797  
Variable response load limiting device  
[NASA-CASE-LAR-12801-1] c 37 N88-23982

## SECONDARY EMISSION

Textured carbon surfaces on copper by sputtering  
[NASA-CASE-LEW-14130-1] c 31 N86-32587

## SECONDARY FLOW

Heat exchanger with oscillating flow  
[NASA-CASE-LAR-14033-1] c 34 N90-27072

## SECTORS

Journal Bearings  
[NASA-CASE-LEW-11076-2] c 37 N74-32921

## SECURITY

Passive intrusion detection system  
[NASA-CASE-NPO-13804-1] c 33 N80-23559  
Portable appliance security apparatus  
[NASA-CASE-GSC-12399-1] c 33 N81-25299  
Random digital encryption secure communication system  
[NASA-CASE-MSC-16462-1] c 32 N82-31583  
Scanning seismic intrusion detection method and apparatus --- monitoring unwanted subterranean entry and departure  
[NASA-CASE-ARC-11317-1] c 35 N83-34272

## SEGMENTS

Method and apparatus for making curved reflectors Patent  
[NASA-CASE-XLE-08917] c 15 N71-15597  
Equal path, phase shifting, sample point interferometer for monitoring the configuration of surfaces  
[NASA-CASE-NPO-17913-1-CU] c 74 N90-27488

## SEISMIC WAVES

Seismic displacement transducer Patent  
[NASA-CASE-XMF-00479] c 14 N70-34794  
Seismic vibration source  
[NASA-CASE-NPO-14112-1] c 46 N79-22679  
Underwater seismic source --- for petroleum exploration  
[NASA-CASE-NPO-14255-1] c 46 N79-23555

## SEISMOGRAPHS

Scanning seismic intrusion detection method and apparatus --- monitoring unwanted subterranean entry and departure  
[NASA-CASE-ARC-11317-1] c 35 N83-34272

## SELECTORS

Molecular beam velocity selector Patent  
[NASA-CASE-XLE-01533] c 11 N71-10777  
Peak polarity selector Patent  
[NASA-CASE-FRC-10010] c 10 N71-24862

## SELF ADAPTIVE CONTROL SYSTEMS

Self-actuating heat switches for redundant refrigeration systems  
[NASA-CASE-NPO-17085-1-CU] c 31 N89-12785

## SELF ALIGNMENT

Electro-optical alignment control system Patent  
[NASA-CASE-XMF-00908] c 14 N70-40238  
Electrical self-aligning connector --- orbital servicer vehicles  
[NASA-CASE-MFS-25211-2] c 33 N84-14423

## SELF ERECTING DEVICES

Flexible foam erectable space structures Patent  
[NASA-CASE-XLA-00686] c 31 N70-34135  
Erectable modular space station Patent  
[NASA-CASE-XLA-00678] c 31 N70-34296  
Manned space station Patent  
[NASA-CASE-XLA-00258] c 31 N70-38676  
Foldable conduit Patent  
[NASA-CASE-XLE-00620] c 32 N70-41579  
Self-erecting reflector Patent  
[NASA-CASE-XGS-09190] c 31 N71-16102  
Collapsible reflector Patent  
[NASA-CASE-XMS-03454] c 09 N71-20658  
Foldable self-erecting joint  
[NASA-CASE-MSC-20635-1] c 18 N87-14373

## SELF FOCUSING

Focal axis resolver for offset reflector antennas  
[NASA-CASE-GSC-12630-1] c 33 N83-36355

## SELF LUBRICATING MATERIALS

Self-lubricating fluoride metal composite materials Patent  
[NASA-CASE-XLE-08511] c 18 N71-23710



- Self-lubricating gears and other mechanical parts  
Patent  
[NASA-CASE-MFS-14971] c 15 N71-24984
- Method of making bearing material  
[NASA-CASE-LEW-11930-3] c 24 N80-33482
- SELF LUBRICATION**
- Method of making bearing materials — self-lubricating, oxidation resistant composites for high temperature applications  
[NASA-CASE-LEW-11930-4] c 24 N79-17916
- Carbide-fluoride-silver self-lubricating composite  
[NASA-CASE-LEW-14196-2] c 37 N87-25585
- SELF MANEUVERING UNITS**
- Hand-held self-maneuvering unit Patent  
[NASA-CASE-XMS-05304] c 05 N71-12336
- Personal propulsion unit Patent  
[NASA-CASE-MFS-20130] c 28 N71-27585
- SELF PROPAGATION**
- Optical frequency waveguide Patent  
[NASA-CASE-HQN-10541-1] c 07 N71-26291
- SELF SEALING**
- Modification of one man life raft  
[NASA-CASE-LAR-10241-1] c 54 N74-14845
- Self-stabilizing radial face seal  
[NASA-CASE-LEW-12991-1] c 37 N81-24442
- Self-compensating solenoid valve  
[NASA-CASE-ARC-11620-1] c 37 N87-25573
- SELF TESTS**
- Self-testing and repairing computer Patent  
[NASA-CASE-NPO-10567] c 08 N71-24633
- Self-checking on-line testable static RAM  
[NASA-CASE-NPO-17839-1-CU] c 60 N90-26518
- SEMICONDUCTOR DEVICES**
- Test fixture for pellet-like electrical elements  
[NASA-CASE-XNP-06032] c 09 N69-21926
- Semiconductor p-n junction stress and strain sensor  
[NASA-CASE-XLA-04980] c 09 N69-27422
- A method for selective gold diffusion of monolithic silicon devices and/or circuits Patent application  
[NASA-CASE-ERC-10072] c 09 N70-11148
- Ultra-long monostable multivibrator employing bistable semiconductor switch to allow charging of timing circuit Patent  
[NASA-CASE-XGS-00381] c 09 N70-34819
- Method of forming thin window drifted silicon charged particle detector Patent  
[NASA-CASE-XLE-00808] c 24 N71-10560
- Method of making a silicon semiconductor device Patent  
[NASA-CASE-XLE-02792] c 26 N71-10607
- Apparatus and method for separating a semiconductor wafer Patent  
[NASA-CASE-ERC-10138] c 26 N71-14354
- Voltage tunable Gunn-type microwave generator Patent  
[NASA-CASE-XER-07894] c 09 N71-18721
- Method and device for determining battery state of charge Patent  
[NASA-CASE-NPO-10194] c 03 N71-20407
- Multialarm summary alarm Patent  
[NASA-CASE-XLE-03061-1] c 10 N71-24798
- Method of temperature compensating semiconductor strain gages Patent  
[NASA-CASE-XLA-04555-1] c 14 N71-25892
- Pneumatic oscillator Patent  
[NASA-CASE-LEW-10345-1] c 10 N71-25899
- Method and apparatus for detecting gross leaks Patent  
[NASA-CASE-ERC-10033] c 14 N71-26672
- Transistor drive regulator Patent  
[NASA-CASE-LEW-10233] c 10 N71-27126
- Orifice gross leak tester Patent  
[NASA-CASE-ERC-10150] c 14 N71-28992
- Method of manufacturing semiconductor devices using refractory dielectrics  
[NASA-CASE-XER-08476-1] c 26 N72-17820
- Fabrication of single crystal film semiconductor devices  
[NASA-CASE-ERC-10222] c 09 N72-22199
- Electrical insulating layer process  
[NASA-CASE-LEW-10489-1] c 15 N72-25447
- Gunn-type solid state devices  
[NASA-CASE-XER-07895] c 26 N72-25679
- Semiconductor transducer device  
[NASA-CASE-ERC-10087-2] c 14 N72-31446
- Hermetically sealed semiconductor  
[NASA-CASE-GSC-10791-1] c 15 N73-14469
- Process for fabricating SiC semiconductor devices  
[NASA-CASE-LEW-12094-1] c 76 N76-25049
- Semiconductor projectile impact detector  
[NASA-CASE-MFS-23008-1] c 35 N78-18390
- Apparatus for use in examining the lattice of a semiconductor wafer by X-ray diffraction  
[NASA-CASE-MFS-23315-1] c 76 N78-24950
- Apparatus for measuring semiconductor device resistance  
[NASA-CASE-NPO-14424-1] c 33 N80-32650
- Electrical power generating system — for windpowered generation  
[NASA-CASE-MFS-24368-3] c 33 N81-22280
- Pyroelectric detector arrays  
[NASA-CASE-LAR-12363-2] c 33 N83-24763
- Imaging X-ray spectrometer  
[NASA-CASE-GSC-12682-1] c 35 N84-33765
- Epitaxial thinning process  
[NASA-CASE-NPO-15786-1] c 76 N84-35112
- Process and apparatus for growing a crystal ribbon  
[NASA-CASE-NPO-15629-1] c 76 N84-35113
- Inelastic tunnel diodes  
[NASA-CASE-LEW-13833-1] c 33 N85-21492
- Low defect, high purity crystalline layers grown by selective deposition  
[NASA-CASE-NPO-15813-1] c 76 N85-30922
- Method and apparatus for measuring minority carrier lifetime in a direct band-gap semiconductor  
[NASA-CASE-NPO-16337-1-CU] c 33 N87-22894
- Method of forming three-dimensional semiconductor structures  
[NASA-CASE-NPO-17835-1-CU] c 76 N90-27518
- SEMICONDUCTOR DIODES**
- Tm,Hc:YLF laser end-pumped by a semiconductor diode laser array  
[NASA-CASE-NPO-17282-1-CU] c 36 N89-12856
- SEMICONDUCTOR JUNCTIONS**
- Simple method of making photovoltaic junctions Patent  
[NASA-CASE-XNP-01960] c 09 N71-23027
- Pressure sensitive transducers Patent  
[NASA-CASE-ERC-10087] c 14 N71-27334
- Semiconductor surface protection material  
[NASA-CASE-ERC-10339-1] c 18 N73-30532
- High voltage planar multijunction solar cell  
[NASA-CASE-LEW-13400-1] c 44 N82-31764
- Screen printed interdigitated back contact solar cell  
[NASA-CASE-LEW-13414-1] c 44 N85-20530
- Method of measuring field funneling and range straggling in semiconductor charge-collecting junctions  
[NASA-CASE-NPO-16584-1-CU] c 76 N86-25269
- Edge geometry superconducting tunnel junctions utilizing an NbN/MgO/NbN thin film structure  
[NASA-CASE-NPO-17812-1-CU] c 76 N90-17456
- SEMICONDUCTOR LASERS**
- Field induced gap infrared detector  
[NASA-CASE-NPO-17526-1-CU] c 35 N89-28796
- Fiber optic sensing system  
[NASA-CASE-LEW-14795-1] c 74 N90-15733
- SEMICONDUCTORS (MATERIALS)**
- Depositing semiconductor films utilizing a thermal gradient  
[NASA-CASE-XKS-04614] c 15 N69-21460
- System for improving signal-to-noise ratio of a communication signal Patent Application  
[NASA-CASE-MSC-12259-1] c 07 N70-12616
- High efficiency multivibrator Patent  
[NASA-CASE-XAC-00942] c 10 N71-16042
- Method of making impurity-type semiconductor electrical contacts Patent  
[NASA-CASE-XMF-01016] c 26 N71-17818
- Method of electrolytically binding a layer of semiconductors together Patent  
[NASA-CASE-XNP-01959] c 26 N71-23043
- Gd or Sm doped silicon semiconductor composition Patent  
[NASA-CASE-XLE-10715] c 26 N71-23292
- Infrared detectors  
[NASA-CASE-LAR-10728-1] c 14 N73-12445
- Traveling wave solid state amplifier utilizing a semiconductor with negative differential mobility  
[NASA-CASE-HQN-10069] c 33 N75-27251
- Vapor deposition apparatus — semiconductors and gallium arsenides  
[NASA-CASE-HQN-10462] c 25 N75-29192
- Application of semiconductor diffusants to solar cells by screen printing  
[NASA-CASE-LEW-12775-1] c 44 N79-11468
- Method for the preparation of inorganic single crystal and polycrystalline electronic materials  
[NASA-CASE-XLE-02545-1] c 76 N79-21910
- Voltage feed through apparatus having reduced partial discharge  
[NASA-CASE-GSC-12347-1] c 33 N80-18286
- Photoelectrochemical cells including chalcogenophosphate photoelectrodes  
[NASA-CASE-LAR-12958-1] c 44 N84-23019
- Epitaxial thinning process  
[NASA-CASE-NPO-15786-1] c 76 N84-35112
- Method for determining the point of zero zeta potential of semiconductor  
[NASA-CASE-LAR-12893-1] c 76 N85-30923
- Method of making macrocrystalline or single crystal semiconductor material  
[NASA-CASE-NPO-15904-1] c 76 N86-28760
- Method for growing low defect, high purity crystalline layers utilizing lateral overgrowth of a patterned mask  
[NASA-CASE-NPO-15813-2] c 76 N87-15882
- Total immersion crystal growth  
[NASA-CASE-NPO-15800-2] c 76 N87-23286
- Apparatus and procedure to detect a liquid-solid interface during crystal growth in a bridgman furnace  
[NASA-CASE-LAR-13597-1-CU] c 25 N87-23713
- Floating emitter solar cell  
[NASA-CASE-NPO-16467-1-CU] c 33 N87-23879
- Liquid encapsulated float zone process and apparatus  
[NASA-CASE-MFS-28144-1] c 76 N88-24545
- Preparation of dilute magnetic semiconductor films by metalorganic chemical vapor deposition  
[NASA-CASE-NPO-17399-1-CU] c 76 N89-14120
- Oxidation of semiconductors and superconductors  
[NASA-CASE-NPO-17534-1-CU] c 76 N89-30076
- SENSITIVITY**
- Active RC networks  
[NASA-CASE-ARC-10042-2] c 10 N72-11256
- Tailorable infrared sensing device with strain layer superlattice structure  
[NASA-CASE-NPO-16607-1-CU] c 76 N88-14836
- SENSITOMETRY**
- Condition sensor system and method  
[NASA-CASE-MSC-14805-1] c 54 N78-32720
- SENSORS**
- Bonding method in the manufacture of continuous regression rate sensor devices  
[NASA-CASE-LAR-10337-1] c 24 N75-30260
- Medical subject monitoring systems — multichannel monitoring systems  
[NASA-CASE-MSC-14180-1] c 52 N76-14757
- Trace water sensor  
[NASA-CASE-NPO-15722-1] c 35 N85-29212
- SENSORY PERCEPTION**
- Tactile sensing means for prosthetic limbs  
[NASA-CASE-MSC-16570-1] c 05 N73-32013
- SEPARATED FLOW**
- Thrust vector control apparatus Patent  
[NASA-CASE-XLE-00208] c 28 N70-34294
- Double hinged flap Patent  
[NASA-CASE-XLA-01290] c 02 N70-42016
- Mixture separation cell Patent  
[NASA-CASE-XMS-02952] c 18 N71-20742
- Flow separation detector  
[NASA-CASE-ARC-11046-1] c 35 N78-14364
- Method and apparatus for detecting laminar flow separation and reattachment  
[NASA-CASE-LAR-13952-1-SB] c 34 N90-19534
- Method of forming a multiple layer dielectric and a hot film sensor therewith  
[NASA-CASE-LAR-13678-1] c 76 N90-24168
- SEPARATORS**
- Condenser - Separator  
[NASA-CASE-XLA-08645] c 15 N69-21465
- Umbilical separator for rockets Patent  
[NASA-CASE-XNP-00425] c 11 N70-38202
- Liquid-gas separation system Patent  
[NASA-CASE-XMS-01624] c 15 N70-40062
- Zero gravity separator Patent  
[NASA-CASE-XLE-00586] c 15 N71-15968
- Separator Patent  
[NASA-CASE-XLA-00415] c 15 N71-16079
- Water separating system Patent  
[NASA-CASE-XMS-13052] c 14 N71-20427
- Vapor liquid separator Patent  
[NASA-CASE-XMF-04042] c 15 N71-23023
- Air removal device  
[NASA-CASE-XLA-08914] c 15 N73-12492
- Centrifugal lyophobic separator  
[NASA-CASE-LAR-10194-1] c 34 N74-30608
- Fluid control apparatus and method  
[NASA-CASE-LAR-11110-1] c 34 N75-26282
- Method and apparatus for fluffing, separating, and cleaning fibers  
[NASA-CASE-LAR-11224-1] c 37 N76-18456
- Gels as battery separators for soluble electrode cells  
[NASA-CASE-LEW-12364-1] c 44 N77-22606
- Low gravity phase separator  
[NASA-CASE-MSC-14773-1] c 35 N78-12390
- Automatic multiple-sample applicator and electrophoresis apparatus  
[NASA-CASE-ARC-10991-1] c 25 N78-14104
- Counter pumping debris excluder and separator — gas turbine shaft seals  
[NASA-CASE-LEW-11855-1] c 07 N78-25090
- Inorganic-organic separators for alkaline batteries  
[NASA-CASE-LEW-12649-1] c 44 N78-25530
- Formulated plastic separators for soluble electrode cells — rubber-ion transport membranes  
[NASA-CASE-LEW-12358-1] c 44 N79-17313

- Water separator  
[NASA-CASE-XMS-01295-1] c 37 N79-21345  
In situ self cross-linking of polyvinyl alcohol battery separators  
[NASA-CASE-LEW-12972-1] c 44 N79-25481  
Partial interlaminar separation system for composites  
[NASA-CASE-LAR-12065-1] c 24 N81-14000  
Polyvinyl alcohol battery separator containing inert filler — alkaline batteries  
[NASA-CASE-LEW-13556-1] c 44 N81-27615  
Method of making formulated plastic separators for soluble electrode cells  
[NASA-CASE-LEW-12358-2] c 25 N82-21268  
Process of treating cellulosic membrane and alkaline with membrane separator  
[NASA-CASE-GSC-10019-1] c 44 N82-24641  
Separator for alkaline batteries and method of making same  
[NASA-CASE-GSC-10350-1] c 44 N82-24642  
Separator for alkaline electric cells and method of making  
[NASA-CASE-GSC-10017-1] c 44 N82-24643  
Separator for alkaline electric batteries and method of making  
[NASA-CASE-GSC-10018-1] c 44 N82-24644  
Alkaline electrochemical cells and method of making  
[NASA-CASE-GSC-10349-1] c 44 N82-24645  
Aqueous alkali metal hydroxide insoluble cellulose ether membrane  
[NASA-CASE-XGS-05584-1] c 25 N82-29370  
Advanced inorganic separators for alkaline batteries  
[NASA-CASE-LEW-13171-1] c 44 N82-29708  
Electrophoresis device  
[NASA-CASE-MFS-25426-1] c 25 N83-10126  
Static continuous electrophoresis device  
[NASA-CASE-MFS-25306-1] c 25 N83-13187  
Advanced inorganic separators for alkaline batteries and method of making the same  
[NASA-CASE-LEW-13171-2] c 44 N83-32176  
Alkaline battery containing a separator of a cross-linked copolymer of vinyl alcohol and unsaturated carboxylic acid  
[NASA-CASE-LEW-13102-1] c 33 N85-29144  
Vortex motion phase separator for zero gravity liquid transfer  
[NASA-CASE-KSC-11387-1] c 29 N90-20236  
Zero-G phase detector and separator  
[NASA-CASE-LEW-14844-1] c 35 N90-22024
- SEQUENCING**  
Synchronous counter Patent  
[NASA-CASE-XGS-02440] c 08 N71-19432  
Control apparatus for applying pulses of selectively predetermined duration to a sequence of loads Patent  
[NASA-CASE-XGS-04224] c 10 N71-26418  
Digital function generator  
[NASA-CASE-NPO-11104] c 08 N72-22165  
MOD 2 sequential function generator for multibit binary sequence  
[NASA-CASE-NPO-10636] c 08 N72-25210  
Pseudonoise sequence generators with three tap linear feedback shift registers  
[NASA-CASE-NPO-11406] c 08 N73-12175  
Mechanical sequencer  
[NASA-CASE-MSC-19536-1] c 37 N77-22482  
Method for sequentially processing a multi-level interconnect circuit in a vacuum chamber  
[NASA-CASE-MFS-15670-1] c 33 N82-33634  
Generation of animation sequences of three dimensional models  
[NASA-CASE-MSC-21379-1-SB] c 61 N90-27340
- SEQUENTIAL ANALYSIS**  
Binary coded sequential acquisition ranging system  
[NASA-CASE-NPO-11194] c 08 N72-25209  
Event sequence detector  
[NASA-CASE-NPO-11703-1] c 10 N73-32144
- SEQUENTIAL COMPUTERS**  
Digital data reformatter/deserializer  
[NASA-CASE-NPO-13676-1] c 60 N79-20751
- SEQUENTIAL CONTROL**  
Linear three-tap feedback shift register Patent  
[NASA-CASE-NPO-10351] c 08 N71-12503  
Binary sequence detector Patent  
[NASA-CASE-XNP-05415] c 08 N71-12505  
Sequencing device utilizing planetary gear set  
[NASA-CASE-MSC-19514-1] c 37 N79-20377  
Method for sequentially processing a multi-level interconnect circuit in a vacuum chamber  
[NASA-CASE-MFS-256704-1] c 33 N84-22884  
Long period pseudo random number sequence generator  
[NASA-CASE-NPO-17241-1-CU] c 33 N90-23636
- SERUMS**  
Reduction of blood serum cholesterol  
[NASA-CASE-NPO-12119-1] c 52 N75-15270

- Human serum albumin crystals and method of preparation  
[NASA-CASE-MFS-28234-1] c 52 N90-20616
- SERVICE LIFE**  
Electro-mechanical sine/cosine generator  
[NASA-CASE-LAR-10503-1] c 09 N72-21248  
Stirling cycle cryogenic cooler  
[US-PATENT-4,389,849] c 44 N83-28574  
Tip cap for a rotor blade  
[NASA-CASE-LEW-13654-1] c 07 N84-22560  
Predictive aging of polymers  
[NASA-CASE-NPO-17524-1-CU] c 27 N90-10261
- SERVOAMPLIFIERS**  
Pneumatic amplifier Patent  
[NASA-CASE-MSC-12121-1] c 15 N71-27147
- SERVOCONTROL**  
Monopulse system with an electronic scanner  
[NASA-CASE-XGS-05582] c 07 N69-27460  
Proportional controller Patent  
[NASA-CASE-XAC-03392] c 03 N70-41954  
Light intensity modulator controller Patent  
[NASA-CASE-XMS-04300] c 09 N71-19479  
Strain coupled servo control system Patent  
[NASA-CASE-XLA-08530] c 32 N71-25360  
Energy limiter for hydraulic actuators Patent  
[NASA-CASE-ARC-10131-1] c 15 N71-27754  
Digital servo controller — for rotating antenna shaft  
[NASA-CASE-KSC-10769-1] c 33 N74-29556  
Digital servo control of random sound test excitation — in reverberant acoustic chamber  
[NASA-CASE-NPO-11823-1] c 71 N74-31148  
Phase-locked servo system — for synchronizing the rotation of slip ring assembly  
[NASA-CASE-MFS-22073-1] c 33 N75-13139  
Servo-controlled intravital microscope system  
[NASA-CASE-NPO-13214-1] c 35 N75-25123  
Autonomous navigation system — gyroscopic pendulum for air navigation  
[NASA-CASE-ARC-11257-1] c 04 N81-21047  
System and method for moving a probe to follow movements of tissue  
[NASA-CASE-NPO-15197-1] c 52 N83-25346  
Control system for an induction motor with energy recovery  
[NASA-CASE-MFS-25477-1] c 33 N84-14424  
Memory metal actuator  
[NASA-CASE-NPO-15960-1] c 37 N86-19604
- SERVOMECHANISMS**  
Interferometer servo system Patent  
[NASA-CASE-NPO-10300] c 14 N71-17662  
Line following servosystem Patent  
[NASA-CASE-XAC-00001] c 15 N71-28952  
A dc servosystem including an ac motor Patent  
[NASA-CASE-NPO-10700] c 07 N71-33613  
Ball screw linear actuator  
[NASA-CASE-NPO-11222] c 15 N72-25456  
Rotary actuator  
[NASA-CASE-NPO-10680] c 31 N73-14855  
Hydraulic drain means for servo-systems  
[NASA-CASE-NPO-10316-1] c 37 N77-22479  
Actuator mechanism  
[NASA-CASE-GSC-11883-2] c 37 N78-31426  
Apparatus for providing a servo drive signal in a high-speed stepping interferometer  
[NASA-CASE-NPO-13569-2] c 35 N79-14348  
Automated syringe sampler — remote sampling of air and water  
[NASA-CASE-LAR-12308-1] c 35 N81-29407  
Electrical servo actuator bracket — fuel control valves on jet engines  
[NASA-CASE-FRC-11044-1] c 37 N81-33483  
Hydraulic actuator mechanism to control aircraft spoiler movements through dual input commands  
[NASA-CASE-LAR-12412-1] c 08 N82-24205  
Servomechanism for Doppler shift compensation in optical correlator for synthetic aperture radar  
[NASA-CASE-NPO-14998-1] c 32 N83-18975
- SERVOMOTORS**  
Automatic closed circuit television arc guidance control Patent  
[NASA-CASE-MFS-13046] c 07 N71-19433  
Transistor servo system including a unique differential amplifier circuit Patent  
[NASA-CASE-XMF-05195] c 10 N71-24861  
Cyclically operable optical shutter  
[NASA-CASE-NPO-10758] c 14 N73-14427  
Rotary actuator  
[NASA-CASE-NPO-10680] c 31 N73-14855  
Velocity servo for continuous scan Fourier interference spectrometer  
[NASA-CASE-NPO-14093-1] c 35 N80-20563  
Load positioning system with gravity compensation  
[NASA-CASE-ARC-11525-1] c 37 N86-27629
- SEWAGE TREATMENT**  
Sewage sludge additive  
[NASA-CASE-NPO-13877-1] c 45 N82-11634

- Method for treating wastewater using microorganisms and vascular aquatic plants  
[NASA-CASE-NSTL-10] c 45 N84-12654
- SHADES**  
Sun shield  
[NASA-CASE-MSC-20162-1] c 37 N87-17036
- SHAFTS (MACHINE ELEMENTS)**  
Fatigue-resistant shear pin  
[NASA-CASE-XLA-09122] c 15 N69-27505  
Elastic universal joint Patent  
[NASA-CASE-XNP-00416] c 15 N70-36947  
Apparatus for absorbing and measuring power Patent  
[NASA-CASE-XLE-00720] c 14 N70-40201  
Two-axis controller Patent  
[NASA-CASE-XFR-04104] c 03 N70-42073  
Ratchet mechanism Patent  
[NASA-CASE-MFS-12805] c 15 N71-17805  
Frictionless universal joint Patent  
[NASA-CASE-NPO-10646] c 15 N71-28467  
Spiral groove seal  
[NASA-CASE-XLE-10326-2] c 15 N72-29488  
High speed hybrid bearing comprising a fluid bearing and a rolling bearing connected in series  
[NASA-CASE-LEW-11152-1] c 15 N73-32359  
Spiral groove seal — for hydraulic rotating shaft  
[NASA-CASE-LEW-10326-3] c 37 N74-10474  
Hole cutter — drill bits and rotating shaft  
[NASA-CASE-MFS-22649-1] c 37 N75-25186  
Twin-capacitive shaft angle encoder with analog output signal  
[NASA-CASE-ARC-10897-1] c 33 N77-31404  
Counter pumping debris excluder and separator — gas turbine shaft seals  
[NASA-CASE-LEW-11855-1] c 07 N78-25090  
Sequencing device utilizing planetary gear set  
[NASA-CASE-MSC-19514-1] c 37 N79-20377  
Shaft seal assembly for high speed and high pressure applications  
[NASA-CASE-LEW-11873-1] c 37 N79-22475  
Speed control device for a heavy duty shaft — solar sails for spacecraft propulsion  
[NASA-CASE-NPO-14170-1] c 37 N81-15364  
Hot gas engine with dual crankshafts  
[NASA-CASE-NPO-14221-1] c 37 N81-25370  
Circumferential shaft seal  
[NASA-CASE-LEW-12119-2] c 37 N81-26447  
Hermetic seal for a shaft  
[NASA-CASE-NPO-15115-1] c 37 N82-24493  
Method for driving two-phase turbines with enhanced efficiency  
[NASA-CASE-NPO-15037-2] c 37 N85-29282  
Angular measurement system  
[NASA-CASE-MFS-25825-1] c 31 N86-29055  
Non-backdrivable free wheeling coupling  
[NASA-CASE-MSC-20475-1] c 37 N87-17037  
Turbomachinery shaft insert  
[NASA-CASE-MFS-28345-2] c 37 N89-28842  
Bidirectional drive and brake mechanism  
[NASA-CASE-MSC-21540-1] c 37 N90-26342
- SHAKERS**  
Planar oscillatory stirring apparatus  
[NASA-CASE-MFS-26002-1-CU] c 35 N86-26598
- SHALE OIL**  
In-situ laser retorting of oil shale  
[NASA-CASE-LEW-12217-1] c 43 N78-14452  
Oil shale extraction using super-critical extraction  
[NASA-CASE-NPO-15656-1] c 43 N84-23012  
Solar heated oil shale pyrolysis process  
[NASA-CASE-NPO-16392-1] c 25 N86-25428
- SHALES**  
Coal-shale interface detection  
[NASA-CASE-MFS-23720-3] c 43 N79-25443  
Coal-shale interface detection system  
[NASA-CASE-MFS-23720-2] c 43 N80-14423  
Coal-shale interface detector  
[NASA-CASE-MFS-23720-1] c 43 N80-23711  
Oil shale extraction using super-critical extraction  
[NASA-CASE-NPO-15656-1] c 43 N84-23012
- SHAPE CONTROL**  
Synchronously deployable truss structure  
[NASA-CASE-LAR-13117-1] c 37 N86-25789  
Antenna surface contour control system  
[NASA-CASE-LAR-13798-1] c 32 N89-25363  
Method and circuit for shaping laser output pulses  
[NASA-CASE-LAR-14203-1] c 36 N89-28817
- SHAPE MEMORY ALLOYS**  
Memory metal actuator  
[NASA-CASE-NPO-15960-1] c 37 N86-19604  
Rotary stepping device with memory metal actuator  
[NASA-CASE-NPO-15482-1] c 37 N87-23970
- SHAPED CHARGES**  
Coupling for linear shaped charge Patent  
[NASA-CASE-XLA-00189] c 33 N70-36846  
Lateral displacement system for separated rocket stages Patent  
[NASA-CASE-XLA-04804] c 31 N71-23008

## SHAPERS

- Mandrel for shaping solid propellant rocket fuel into a motor casing Patent  
[NASA-CASE-XLA-00304] c 27 N70-34783
- Tube dimpling tool Patent  
[NASA-CASE-XMS-06876] c 15 N71-21536
- Dielectric molding apparatus Patent  
[NASA-CASE-LAR-10121-1] c 15 N71-26721

## SHAPES

- Stripline feed for a microstrip array of patch elements with teardrop shaped probes  
[NASA-CASE-NPO-17548-1-CU] c 32 N90-16104
- Lightweight piston architecture  
[NASA-CASE-LAR-13926-1] c 37 N90-22042

## SHARKS

- Process for conditioning tanned sharkskin and articles made therefrom Patent  
[NASA-CASE-XMS-09691-1] c 18 N71-15545

## SHARPNESS

- Method of forming a sharp edge on an optical device  
[NASA-CASE-GSC-12348-1] c 74 N80-24149

## SHEAR CREEP

- Instrument for measuring torsional creep and recovery Patent  
[NASA-CASE-XLE-01481] c 14 N71-10781

## SHEAR FLOW

- Shear modulated fluid amplifier Patent  
[NASA-CASE-MFS-10412] c 12 N71-17578

## SHEAR PROPERTIES

- Parallel plate viscometer Patent  
[NASA-CASE-XNP-09462] c 14 N71-17584

## SHEAR STRESS

- Fatigue-resistant shear pin  
[NASA-CASE-XLA-09122] c 15 N69-27505
- Angular velocity and acceleration measuring apparatus  
[NASA-CASE-ERC-10292] c 14 N72-25410
- Bonded joint and method — for reducing peak shear stress in adhesive bonds  
[NASA-CASE-LAR-10900-1] c 37 N74-23064
- Delamination test apparatus and method  
[NASA-CASE-LAR-13985-1] c 24 N89-28586
- Method and apparatus for detecting laminar flow separation and reattachment  
[NASA-CASE-LAR-13952-1-SB] c 34 N90-19534

## SHEARING

- Elastomer coated filler and composites thereof comprising at least 60% by weight of a hydrated filler and an elastomer containing an acid substituent  
[NASA-CASE-NPO-14857-1] c 27 N83-19900

## SHELL ANODES

- Ring-cusp ion thruster with shell anode  
[NASA-CASE-LEW-13881-1] c 20 N85-21256

## SHELLS (STRUCTURAL FORMS)

- Channel-type shell construction for rocket engines and the like Patent  
[NASA-CASE-XLE-00144] c 28 N70-34860

## SHIELDING

- Spherical shield Patent  
[NASA-CASE-XNP-01855] c 15 N71-28937
- Shielded flat cable  
[NASA-CASE-MFS-13687-2] c 09 N72-22198
- System for the measurement of ultra-low stray light levels — determining the adequacy of large space telescope systems  
[NASA-CASE-MFS-23513-1] c 74 N79-11865
- Space ultra-vacuum facility and method of operation  
[NASA-CASE-MFS-28139-1] c 29 N87-18679
- Trailer shield assembly for a welding torch  
[NASA-CASE-MFS-29260-1] c 37 N90-19602
- Electrode carrying wire for GTAW welding  
[NASA-CASE-MFS-29491-1] c 31 N90-26168
- Hypervelocity impact shield  
[NASA-CASE-MS-C-21420-1] c 18 N90-26858

## SHIFT REGISTERS

- Binary to binary-coded-decimal converter Patent  
[NASA-CASE-XNP-00432] c 08 N70-35423
- Linear three-tap feedback shift register Patent  
[NASA-CASE-NPO-10351] c 08 N71-12503
- Counter and shift register Patent  
[NASA-CASE-XNP-01753] c 08 N71-22897
- Current steering commutator  
[NASA-CASE-NPO-10743] c 08 N72-21199
- Feedback shift register with states decomposed into cycles of equal length  
[NASA-CASE-NPO-11082] c 08 N72-22167
- MOD 2 sequential function generator for multibit binary sequence  
[NASA-CASE-NPO-10636] c 08 N72-25210
- Pseudonoise sequence generators with three tap linear feedback shift registers  
[NASA-CASE-NPO-11406] c 08 N73-12175
- A m-ary linear feedback shift register with binary logic  
[NASA-CASE-NPO-11868] c 10 N73-20254
- Counting digital filters  
[NASA-CASE-NPO-11821-1] c 08 N73-26175

- Event sequence detector  
[NASA-CASE-NPO-11703-1] c 10 N73-32144
- Method and apparatus for decoding compatible convolutional codes  
[NASA-CASE-MS-C-14070-1] c 32 N74-32588
- Nonlinear nonsingular feedback shift registers  
[NASA-CASE-NPO-13451-1] c 33 N76-14373
- Selective data segment monitoring system — using shift registers  
[NASA-CASE-ARC-10899-1] c 60 N77-19760
- Digital data reformatter/deserializer  
[NASA-CASE-NPO-13676-1] c 60 N79-20751

## SHIP HULLS

- Hydrodynamic skin-friction reduction  
[NASA-CASE-LAR-14078-1-CU] c 34 N90-27071

## SHOCK ABSORBERS

- Pivotal shock absorbing pad assembly Patent  
[NASA-CASE-XMF-03856] c 31 N70-34159
- Frangible tube energy dissipation Patent  
[NASA-CASE-XLA-00754] c 15 N70-34850
- Shock absorbing support and restraint means Patent  
[NASA-CASE-XMS-01240] c 05 N70-35152
- Energy absorbing structure Patent Application  
[NASA-CASE-MS-C-12279-1] c 15 N70-35679
- Landing pad assembly for aerospace vehicles Patent  
[NASA-CASE-XMF-02853] c 31 N70-36654
- Space craft soft landing system Patent  
[NASA-CASE-XMF-02108] c 31 N70-36845
- Double-acting shock absorber Patent  
[NASA-CASE-XMF-01045] c 15 N70-40354
- Articulated multiple couch assembly Patent  
[NASA-CASE-MS-C-11253] c 05 N71-12343
- Shock absorber Patent  
[NASA-CASE-XMS-03722] c 15 N71-21530
- Impact energy absorber Patent  
[NASA-CASE-XLA-01530] c 14 N71-23092
- Low onset rate energy absorber  
[NASA-CASE-MS-C-12279] c 15 N72-17450
- Impact energy absorbing system utilizing fractureable material  
[NASA-CASE-NPO-10671] c 15 N72-20443
- Translatory shock absorber for attitude sensors  
[NASA-CASE-MFS-22905-1] c 19 N76-22284
- Vehicular impact absorption system  
[NASA-CASE-NPO-14014-1] c 37 N79-10420
- Variable response load limiting device  
[NASA-CASE-LAR-12801-1] c 37 N88-23982

## SHOCK LOADS

- Wind tunnel model damper Patent  
[NASA-CASE-XLA-09480] c 11 N71-33612

## SHOCK MEASURING INSTRUMENTS

- Semiconductor projectile impact detector  
[NASA-CASE-MFS-23008-1] c 35 N78-18390

## SHOCK RESISTANCE

- Method and apparatus for shock protection Patent  
[NASA-CASE-XLA-00482] c 15 N70-36409
- Thermal shock resistant hafnia ceramic material  
[NASA-CASE-LAR-10894-1] c 18 N73-14584
- Thermal shock and erosion resistant tantalum carbide ceramic material  
[NASA-CASE-LAR-11802-1] c 27 N78-17206
- Laser surface fusion of plasma sprayed ceramic turbine seals  
[NASA-CASE-LEW-13269-1] c 18 N83-20996
- Method of fabricating an abradable gas path seal  
[NASA-CASE-LEW-13269-2] c 37 N84-22957

## SHOCK TUBES

- Means for controlling rupture of shock tube diaphragms Patent  
[NASA-CASE-XAC-00731] c 11 N71-15960
- Shock tube bypass piston tunnel  
[NASA-CASE-NPO-12109] c 11 N72-22245
- Annular arc accelerator shock tube  
[NASA-CASE-NPO-13528-1] c 09 N77-10071

## SHOCK WAVE INTERACTION

- Absorptive splitter for closely spaced supersonic engine air inlets Patent  
[NASA-CASE-XLA-02865] c 28 N71-15563

## SHOCK WAVE LUMINESCENCE

- Shock-layer radiation measurement  
[NASA-CASE-XAC-02970] c 14 N69-39896

## SHOCK WAVE PROFILES

- Shock-layer radiation measurement  
[NASA-CASE-XAC-02970] c 14 N69-39896
- Adapter for mounting a microphone flush with the external surface of the skin of a pressurized aircraft  
[NASA-CASE-FRC-11072-1] c 05 N83-27975

## SHOCK WAVES

- Shock tube powder dispersing apparatus Patent  
[NASA-CASE-XLE-04946] c 17 N71-24911
- Shock wave convergence apparatus  
[NASA-CASE-MFS-20890] c 14 N72-22439
- Synthesis of superconducting compounds by explosive compaction of powders  
[NASA-CASE-MFS-20861-1] c 18 N73-32437

- Shock position sensor for supersonic inlets — measuring pressure in the throat of a supersonic inlet  
[NASA-CASE-LEW-11915-1] c 35 N76-14431
- Impact tolerant material  
[NASA-CASE-LAR-12887-3] c 24 N90-21822

## SHOES

- Jet shoes  
[NASA-CASE-XLA-08491] c 05 N69-21380

## SHORT CIRCUITS

- Protection for energy conversion systems  
[NASA-CASE-XGS-04808] c 03 N69-25146
- Triode thermionic energy converter  
[NASA-CASE-XLE-01015] c 03 N69-39898
- Analog to digital converter tester Patent  
[NASA-CASE-XLA-06713] c 14 N71-28991
- Apparatus including a plurality of spaced transformers for locating short circuits in cables  
[NASA-CASE-KSC-10899-1] c 33 N79-18193
- Test apparatus for locating shorts during assembly of electrical buses  
[NASA-CASE-ARC-11116-1] c 33 N82-24420
- Thermal switch disc for short circuit protection of batteries  
[NASA-CASE-MS-C-21428-1] c 33 N90-17008

## SHOT PEENING

- Method of peening and portable peening gun  
[NASA-CASE-MFS-23047-1] c 37 N76-18454

## SHOULDERS

- Shoulder and hip joint for hard space suits  
[NASA-CASE-ARC-11543-1] c 54 N86-28620
- Shoulder and hip joints for hard space suits and the like  
[NASA-CASE-ARC-11534-1] c 54 N86-29507

## SHROUDED NOZZLES

- Two dimensional wedge/translating shroud nozzle  
[NASA-CASE-LAR-11919-1] c 07 N78-27121

## SHROUDED TURBINES

- Composite seal for turbomachinery — backings for turbine engine shrouds  
[NASA-CASE-LEW-12131-1] c 37 N79-18318
- Gas path seal  
[NASA-CASE-NPO-12131-3] c 37 N80-18400
- Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-2] c 37 N80-26658
- Laser surface fusion of plasma sprayed ceramic turbine seals  
[NASA-CASE-LEW-13269-1] c 18 N83-20996
- Thermal stress minimized, two component, turbine shroud seal  
[NASA-CASE-LEW-14212-1] c 37 N88-23978

## SHROUDS

- Composite powerplant and shroud therefor Patent  
[NASA-CASE-XLA-01043] c 28 N71-10780
- Composite seal for turbomachinery — backings for turbine engine shrouds  
[NASA-CASE-LEW-12131-1] c 37 N79-18318
- Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-3] c 37 N82-19540
- Active clearance control system for a turbomachine  
[NASA-CASE-LEW-12938-1] c 07 N82-32366
- Method of fabricating an abradable gas path seal  
[NASA-CASE-LEW-13269-2] c 37 N84-22957

## SHUTTERS

- High speed shutter — electrically actuated ribbon loop for shuttering optical or fluid passageways  
[NASA-CASE-ARC-10516-1] c 70 N74-21300

## SHUTTLE DERIVED VEHICLES

- Three stage rocket vehicle with parallel staging  
[NASA-CASE-MFS-25878-1] c 18 N84-27787

## SIDE INLETS

- Low-drag ground vehicle particularly suited for use in safely transporting livestock  
[NASA-CASE-FRC-11058-1] c 85 N82-33288

## SIDE BANDS

- Phase-locked loop with sideband rejecting properties Patent  
[NASA-CASE-XNP-02723] c 07 N70-41680
- Method and means for generation of tunable laser sidebands in the far-infrared region  
[NASA-CASE-NPO-16497-1-CU] c 36 N87-25567

## SIDELOBE REDUCTION

- Dual mode horn antenna Patent  
[NASA-CASE-XNP-01057] c 07 N71-15907
- Video processor for air traffic control beacon system  
[NASA-CASE-KSC-11155-1] c 04 N86-19304

## SIGNAL ANALYSIS

- Signal detection and tracking apparatus Patent  
[NASA-CASE-XGS-03502] c 10 N71-20852
- Method and apparatus for a single channel digital communications system — synchronization of received PCM signal by digital correlation with reference signal  
[NASA-CASE-NPO-11302-2] c 32 N74-10132
- Differential phase shift keyed signal resolver  
[NASA-CASE-MS-C-14066-1] c 33 N74-27705

Correlation type phase detector — with time correlation integrator for frequency multiplexed signals  
 [NASA-CASE-GSC-11744-1] c 33 N75-26243  
 Real time analysis of voiced sounds  
 [NASA-CASE-NPO-13485-1] c 32 N76-31372  
 Digital plus analog output encoder  
 [NASA-CASE-GSC-12115-1] c 62 N76-31946  
 Serial data correlator/code translator  
 [NASA-CASE-KSC-11025-1] c 32 N83-13323  
 Video processor for air traffic control beacon system  
 [NASA-CASE-KSC-11155-1] c 04 N86-19304  
 Acoustic emission frequency discrimination  
 [NASA-CASE-MSC-20487-1] c 35 N88-23966

**SIGNAL ANALYZERS**

System for monitoring signal amplitude ranges  
 [NASA-CASE-XMS-04061-1] c 09 N69-39885  
 Sampled data controller Patent  
 [NASA-CASE-GSC-10554-1] c 08 N71-29033  
 Family of frequency to amplitude converters  
 [NASA-CASE-MSC-12395] c 09 N72-25257  
 Apparatus for statistical time-series analysis of electrical signals  
 [NASA-CASE-MSC-12428-1] c 10 N73-25240  
 Pulse stretcher for narrow pulses  
 [NASA-CASE-MSC-14130-1] c 33 N74-32711  
 Electronic optical transfer function analyzer  
 [NASA-CASE-MFS-21672-1] c 74 N76-19935  
 Speech analyzer  
 [NASA-CASE-GSC-11898-1] c 32 N77-30309

**SIGNAL DETECTION**

Position location system and method Patent  
 [NASA-CASE-GSC-10087-2] c 21 N71-13958  
 Method of detecting impending saturation of magnetic cores  
 [NASA-CASE-ERC-10089] c 23 N72-17747  
 Anti-multipath digital signal detector  
 [NASA-CASE-LAR-11827-1] c 32 N77-10392  
 Multiple rate digital command detection system with range clean-up capability  
 [NASA-CASE-NPO-13753-1] c 32 N77-20289  
 Automatic communication signal monitoring system  
 [NASA-CASE-NPO-13941-1] c 32 N79-10262  
 Apparatus and method for stabilized phase detection for binary signal tracking loops  
 [NASA-CASE-MSC-16461-1] c 33 N79-11313  
 Method and apparatus for receiving and tracking phase modulated signals  
 [NASA-CASE-MSC-16170-2] c 32 N84-27952

**SIGNAL DETECTORS**

Surface roughness detector Patent  
 [NASA-CASE-XLA-00203] c 14 N70-34161  
 Pulse amplitude and width detector Patent  
 [NASA-CASE-XMF-06519] c 09 N71-12519  
 System for monitoring the presence of neutrals in a stream of ions Patent  
 [NASA-CASE-XNP-02592] c 24 N71-20518  
 Digital modulator and demodulator Patent  
 [NASA-CASE-ERC-10041] c 08 N71-29138  
 Coal-shale interface detection system  
 [NASA-CASE-MFS-23720-2] c 43 N80-14423  
 Pulse transducer with artifact signal attenuator — heart rate sensors  
 [NASA-CASE-FRC-11012-1] c 52 N80-23969  
 Self-calibrating threshold detector  
 [NASA-CASE-MSC-16370-1] c 35 N81-19427  
 Triac failure detector  
 [NASA-CASE-MFS-25607-1] c 33 N83-34190  
 Method and apparatus for detecting laminar flow separation and reattachment  
 [NASA-CASE-LAR-13952-1-SB] c 34 N90-19534

**SIGNAL DISTORTION**

Low distortion receiver for bi-level baseband PCM waveforms  
 [NASA-CASE-MSC-14557-1] c 32 N76-16249

**SIGNAL ENCODING**

Adaptive compression of communication signals Patent  
 [NASA-CASE-XLA-03076] c 07 N71-11266  
 Self-calibrating threshold detector  
 [NASA-CASE-MSC-16370-1] c 35 N81-19427  
 Random digital encryption secure communication system  
 [NASA-CASE-MSC-16462-1] c 32 N82-31583

**SIGNAL GENERATORS**

Plural recorder system  
 [NASA-CASE-XMS-06949] c 09 N69-21467  
 Signal generator  
 [NASA-CASE-XNP-05612] c 09 N69-21468  
 Means for generating a sync signal in an FM communication system Patent  
 [NASA-CASE-XNP-10830] c 07 N71-11281  
 Array phasing device Patent  
 [NASA-CASE-ERC-10046] c 10 N71-18722  
 Sidereal frequency generator Patent  
 [NASA-CASE-XGS-02610] c 14 N71-23174

Controllers Patent  
 [NASA-CASE-XMS-07487] c 15 N71-23255  
 Signal ratio system utilizing voltage controlled oscillators Patent  
 [NASA-CASE-XMF-04367] c 09 N71-23545  
 Signal processing apparatus for multiplex transmission Patent  
 [NASA-CASE-NPO-10388] c 07 N71-24622  
 Multialarm summary alarm Patent  
 [NASA-CASE-XLE-03061-1] c 10 N71-24798  
 Adaptive system and method for signal generation Patent  
 [NASA-CASE-GSC-11367] c 10 N71-26374  
 Voltage dropout sensor Patent  
 [NASA-CASE-KSC-10020] c 10 N71-27338  
 System for controlling the operation of a variable signal device  
 [NASA-CASE-NPO-11064] c 07 N72-11150  
 Digital function generator  
 [NASA-CASE-NPO-11104] c 08 N72-22165  
 Hall effect transducer  
 [NASA-CASE-LAR-10620-1] c 09 N72-25255  
 Gunn-type solid state devices  
 [NASA-CASE-XER-07895] c 26 N72-25679  
 Audio frequency marker system  
 [NASA-CASE-NPO-11147] c 14 N72-27408  
 Digital servo control of random sound test excitation — in reverberant acoustic chamber  
 [NASA-CASE-NPO-11623-1] c 71 N74-31148  
 Signal conditioner test set  
 [NASA-CASE-KSC-10750-1] c 35 N75-12270  
 System for generating timing and control signals  
 [NASA-CASE-NPO-13125-1] c 33 N75-19519  
 Pseudo-noise test set for communication system evaluation — test signals  
 [NASA-CASE-MFS-22671-1] c 35 N75-21582  
 NDIR gas analyzer based on absorption modulation ratios for known and unknown samples  
 [NASA-CASE-ARC-10802-1] c 35 N75-30502  
 Twin-capacitive shaft angle encoder with analog output signal  
 [NASA-CASE-ARC-10897-1] c 33 N77-31404  
 Apparatus for providing a servo drive signal in a high-speed stepping interferometer  
 [NASA-CASE-NPO-13568-2] c 35 N79-14348  
 Versatile LDV burst simulator  
 [NASA-CASE-LAR-11859-1] c 35 N79-14349  
 Underwater seismic source — for petroleum exploration  
 [NASA-CASE-NPO-14255-1] c 46 N79-23555  
 Frequency translating phase conjugation circuit for active retrodirective antenna array — microwave transmission  
 [NASA-CASE-NPO-14536-1] c 32 N81-14185  
 Integrated control system for a gas turbine engine  
 [NASA-CASE-LEW-12594-2] c 07 N81-19116  
 Motor power factor controller with a reduced voltage starter  
 [NASA-CASE-MFS-25586-1] c 33 N82-11360  
 Combinational logic for generating gate drive signals for phase control rectifiers  
 [NASA-CASE-MFS-25208-1] c 33 N83-10345  
 Adaptive reference voltage generator for firing angle control of line-commutated inverters  
 [NASA-CASE-MFS-25215-1] c 33 N83-31953  
 Magnetic heading reference  
 [NASA-CASE-LAR-12638-1] c 04 N84-14132  
 Brushless DC motor control system responsive to control signals generated by a computer or the like  
 [NASA-CASE-NPO-16420-1] c 33 N86-20681

**SIGNAL MEASUREMENT**

Amplifier for measuring low-level signals in the presence of high common mode voltage  
 [NASA-CASE-MFS-25868-1] c 33 N86-20670

**SIGNAL MIXING**

Signal multiplexer  
 [NASA-CASE-XGS-01110] c 07 N69-24334  
 Baseband signal combiner for large aperture antenna array  
 [NASA-CASE-NPO-14641-1] c 32 N81-29308

**SIGNAL PROCESSING**

Adaptive compression of communication signals Patent  
 [NASA-CASE-XLA-03076] c 07 N71-11266  
 Television signal scan rate conversion system Patent  
 [NASA-CASE-XMS-07168] c 07 N71-11300  
 Difference circuit Patent  
 [NASA-CASE-XNP-08274] c 10 N71-13537  
 Correlation function apparatus Patent  
 [NASA-CASE-XNP-00746] c 07 N71-21476  
 Sidereal frequency generator Patent  
 [NASA-CASE-XGS-02610] c 14 N71-23174  
 Feedback integrator with grounded capacitor Patent  
 [NASA-CASE-XAC-10607] c 10 N71-23669

Signal processing apparatus for multiplex transmission Patent  
 [NASA-CASE-NPO-10388] c 07 N71-24622  
 Television signal processing system Patent  
 [NASA-CASE-NPO-10140] c 07 N71-24742  
 Electronic scanning of 2-channel monopulse patterns Patent  
 [NASA-CASE-GSC-10299-1] c 09 N71-24804  
 Remodulator filter Patent  
 [NASA-CASE-NPO-10198] c 09 N71-24806  
 Video sync processor Patent  
 [NASA-CASE-KSC-10002] c 10 N71-25865  
 Transient video signal recording with expanded playback Patent  
 [NASA-CASE-ARC-10003-1] c 09 N71-25866  
 Phase multiplying electronic scanning system Patent  
 [NASA-CASE-NPO-10302] c 10 N71-26142  
 Variable frequency nuclear magnetic resonance spectrometer Patent  
 [NASA-CASE-XNP-09830] c 14 N71-26266  
 Digital modulator and demodulator Patent  
 [NASA-CASE-ERC-10041] c 08 N71-29138  
 Digital pulse width selection circuit Patent  
 [NASA-CASE-XLA-07789] c 09 N71-29139  
 Phase shift circuit apparatus  
 [NASA-CASE-ARC-10269-1] c 10 N72-16172  
 Contourograph system for monitoring electrocardiograms  
 [NASA-CASE-MSC-13407-1] c 10 N72-20225  
 Recorder using selective noise filter  
 [NASA-CASE-ERC-10112] c 07 N72-21119  
 Logarithmic function generator utilizing an exponentially varying signal in an inverse manner  
 [NASA-CASE-ERC-10267] c 09 N72-23173  
 Flexible computer accessed telemetry  
 [NASA-CASE-NPO-11358] c 07 N72-25172  
 Data processor with conditionally supplied clock signals  
 [NASA-CASE-GSC-10975-1] c 08 N73-13187  
 Multichannel telemetry system  
 [NASA-CASE-NPO-11572] c 07 N73-16121  
 Measurement system  
 [NASA-CASE-MFS-20658-1] c 14 N73-30386  
 Digital to analog conversion apparatus  
 [NASA-CASE-MSC-12458-1] c 08 N73-32081  
 Fluid pressure amplifier and system  
 [NASA-CASE-LAR-10868-1] c 33 N74-11050  
 Low level signal limiter  
 [NASA-CASE-XLE-04791] c 32 N74-22096  
 Miniature multichannel biotelemetry system  
 [NASA-CASE-NPO-13065-1] c 52 N74-26625  
 Apparatus and method for processing Korotkov sounds — for blood pressure measurement  
 [NASA-CASE-MSC-13999-1] c 52 N74-26626  
 Pulse stretcher for narrow pulses  
 [NASA-CASE-MSC-14130-1] c 33 N74-32711  
 Continuous Fourier transform method and apparatus — for the analysis of simultaneous analog signal components  
 [NASA-CASE-ARC-10466-1] c 60 N75-13539  
 Signal conditioning circuit apparatus — with constant input impedance  
 [NASA-CASE-ARC-10348-1] c 33 N75-19518  
 Television noise reduction device  
 [NASA-CASE-MSC-12607-1] c 32 N75-21485  
 Isolated output system for a class D switching-mode amplifier  
 [NASA-CASE-MFS-21616-1] c 33 N75-30429  
 Compact bi-phase pulse coded modulation decoder  
 [NASA-CASE-KSC-10834-1] c 33 N76-14371  
 Filtering device — removing electromagnetic noise from voice communication signals  
 [NASA-CASE-MFS-22729-1] c 32 N76-21366  
 System for measuring Reynolds in a turbulently flowing fluid — signal processing  
 [NASA-CASE-ARC-10755-2] c 34 N76-27517  
 Three phase full wave dc motor decoder  
 [NASA-CASE-GSC-11824-1] c 33 N77-26386  
 Apparatus for determining thermophysical properties of test specimens  
 [NASA-CASE-LAR-11883-1] c 09 N77-27131  
 Analog to digital converter for two-dimensional radiant energy array computers  
 [NASA-CASE-GSC-11839-3] c 60 N77-32731  
 Hearing aid malfunction detection system  
 [NASA-CASE-MSC-14916-1] c 33 N78-10375  
 Swept group delay measurement  
 [NASA-CASE-NPO-13909-1] c 33 N78-25319  
 Quadrature demodulation  
 [NASA-CASE-GSC-12137-1] c 33 N78-32338  
 Bit error rate measurement above and below bit rate tracking threshold  
 [NASA-CASE-MSC-12743-1] c 32 N79-10263  
 Multibeam single frequency synthetic aperture radar processor for imaging separate range swaths  
 [NASA-CASE-NPO-14525-1] c 32 N79-19195

- Electrochemical detection device — for use in microbiology  
[NASA-CASE-LAR-11922-1] c 25 N79-24073
- Scannable beam forming interferometer antenna array system  
[NASA-CASE-GSC-12365-1] c 32 N80-28578
- System for plotting subsoil structure and method therefor  
[NASA-CASE-NPO-14191-1] c 31 N80-32584
- CCD correlated quadruple sampling processor  
[NASA-CASE-NPO-14426-1] c 33 N81-27396
- Interleaving device  
[NASA-CASE-GSC-12111-2] c 33 N81-29342
- Reconfiguring redundancy management  
[NASA-CASE-MSC-18498-1] c 60 N82-29013
- Discriminator aided phase lock acquisition for suppressed carrier signals  
[NASA-CASE-NPO-14311-1] c 33 N82-29539
- Serial data correlator/code translator  
[NASA-CASE-KSC-11025-1] c 32 N83-13323
- Interferometric angle monitor  
[NASA-CASE-GSC-12614-1] c 74 N83-32577
- Real time pressure signal system for a rotary engine  
[NASA-CASE-LEW-13622-1] c 07 N84-22559
- Digital interface for bi-directional communication between a computer and a peripheral device  
[NASA-CASE-MSC-20258-1] c 60 N84-28492
- Pipelined digital SAR azimuth correlator using hybrid FFT-transversal filter  
[NASA-CASE-NPO-15519-1] c 32 N84-34651
- Optical stereo video signal processor  
[NASA-CASE-MFS-25752-1] c 74 N86-21348
- Method and apparatus for telemetry adaptive bandwidth compression  
[NASA-CASE-MSC-20821-1] c 17 N87-25348
- Processing circuit with asymmetry corrector and convolutional encoder for digital data  
[NASA-CASE-MSC-20187-1] c 33 N87-25531
- Doppler-corrected differential detection system  
[NASA-CASE-NPO-16987-1-CU] c 32 N88-30001
- Frequency domain laser velocimeter signal processor  
[NASA-CASE-LAR-13552-1-CU] c 33 N89-14385
- Digital carrier demodulator employing components working beyond normal limits  
[NASA-CASE-NPO-17628-1-CU] c 32 N89-28684
- Vibration analyzer  
[NASA-CASE-MSC-21408-1] c 37 N89-28829
- Fiber optic frequency transfer link  
[NASA-CASE-NPO-17703-1-CU] c 74 N89-29191
- Network of dedicated processors for finding lowest-cost map path  
[NASA-CASE-NPO-17716-1-CU] c 62 N90-10608
- Apparatus for imaging deep arterial and coronary lesions  
[NASA-CASE-NPO-17439-1-CU] c 52 N90-16391
- Phase ambiguity resolution for offset QPSK modulation systems  
[NASA-CASE-NPO-17853-1-CU] c 32 N90-16975
- Method and apparatus for positioning a robotic end effector  
[NASA-CASE-MSC-21476-1] c 37 N90-17137
- Method and apparatus for characterizing reflected ultrasonic pulses  
[NASA-CASE-LAR-13966-1] c 71 N90-17408
- Efficient detection and signal parameter estimation with application to high dynamic GPS receiver  
[NASA-CASE-NPO-17820-1-CU] c 04 N90-18379
- Doppler radar with multiphase modulation of transmitted and reflected signal  
[NASA-CASE-MSC-18808-1] c 32 N90-20280
- Magneto acoustic emission apparatus for testing materials for embrittlement  
[NASA-CASE-LAR-13817-1] c 26 N90-21170
- Balanced bridge feedback control system  
[NASA-CASE-NPO-17430-1-CU] c 33 N90-21951
- Zero-G phase detector and separator  
[NASA-CASE-LEW-14844-1] c 35 N90-22024
- Quantitative surface temperature measurement using two-color thermographic phosphors and video equipment  
[NASA-CASE-LAR-13740-1] c 35 N90-22770
- Three-dimensional laser velocimeter simultaneity detector  
[NASA-CASE-ARC-11876-1] c 36 N90-25340
- Closed-loop autonomous docking system  
[NASA-CASE-MFS-28421-1] c 18 N90-26861
- Multistage estimation of received carrier signal parameters under very high dynamic conditions of the receiver  
[NASA-CASE-NPO-17911-1-CU] c 32 N90-27016
- SIGNAL RECEPTION**
- Radar ranging receiver Patent  
[NASA-CASE-XNP-00748] c 07 N70-36911
- Reflectometer for receiver input impedance match measurement Patent  
[NASA-CASE-XNP-10843] c 07 N71-11267
- Diversity receiving system with diversity phase lock Patent  
[NASA-CASE-XGS-01222] c 10 N71-20841
- Signal detection and tracking apparatus Patent  
[NASA-CASE-XGS-03502] c 10 N71-20852
- Optimum predetection diversity receiving system Patent  
[NASA-CASE-XGS-00740] c 07 N71-23098
- Decoder system Patent  
[NASA-CASE-NPO-10118] c 07 N71-24741
- Antenna array phase quadrature tracking system Patent  
[NASA-CASE-MSC-12205-1] c 07 N71-27056
- Electricity measurement devices employing liquid crystalline materials  
[NASA-CASE-ERC-10275] c 26 N72-25680
- Filter for third order phase locked loops  
[NASA-CASE-NPO-11941-1] c 10 N73-27171
- Ferrofluidic solenoid  
[NASA-CASE-NPO-11738-1] c 09 N73-30185
- Scan converting video tape recorder  
[NASA-CASE-NPO-10166-2] c 35 N76-16391
- Faraday rotation measurement method and apparatus  
[NASA-CASE-NPO-14839-1] c 35 N82-15381
- Method and apparatus for receiving and tracking phase modulated signals  
[NASA-CASE-MSC-16170-2] c 32 N84-27952
- Single frequency multitransmitter telemetry  
[NASA-CASE-LAR-13006-1] c 17 N87-16863
- SIGNAL REFLECTION**
- Reflectometer for receiver input impedance match measurement Patent  
[NASA-CASE-XNP-10843] c 07 N71-11267
- Reflex feed system for dual frequency antenna with frequency cutoff means  
[NASA-CASE-NPO-14022-1] c 32 N78-31321
- SIGNAL STABILIZATION**
- Linear accelerator frequency control system Patent  
[NASA-CASE-XGS-05441] c 10 N71-22962
- Digital modulator and demodulator Patent  
[NASA-CASE-ERC-10041] c 08 N71-29138
- System for interference signal nulling by polarization adjustment  
[NASA-CASE-NPO-13140-1] c 32 N75-24982
- Fiber optic transmission line stabilization apparatus and method  
[NASA-CASE-NPO-15036-1] c 74 N82-19029
- SIGNAL TO NOISE RATIOS**
- System for improving signal-to-noise ratio of a communication signal Patent Application  
[NASA-CASE-MSC-12259-1] c 07 N70-12616
- Radar ranging receiver Patent  
[NASA-CASE-XNP-00748] c 07 N70-36911
- Phase detector assembly Patent  
[NASA-CASE-XMF-00701] c 09 N70-40272
- Signal-to-noise ratio estimating by taking ratio of mean and standard deviation of integrated signal samples Patent  
[NASA-CASE-XNP-05254] c 07 N71-20791
- Signal ratio system utilizing voltage controlled oscillators Patent  
[NASA-CASE-XMF-04367] c 09 N71-23545
- Recorder using selective noise filter  
[NASA-CASE-ERC-10112] c 07 N72-21119
- Parametric amplifiers with idler circuit feedback  
[NASA-CASE-LAR-10253-1] c 09 N72-25258
- System for improving signal-to-noise ratio of a communication signal  
[NASA-CASE-MSC-12259-2] c 07 N72-33146
- Signal-to-noise ratio determination circuit  
[NASA-CASE-GSC-11239-1] c 10 N73-25241
- Gated compressor, distortionless signal limiter  
[NASA-CASE-NPO-11820-1] c 32 N74-19788
- Direct drive robotic hand  
[NASA-CASE-NPO-17917-1-CU] c 37 N90-26339
- SIGNAL TRANSMISSION**
- Time division multiplex system  
[NASA-CASE-XGS-05918] c 07 N69-39974
- Apparatus for coupling a plurality of ungrounded circuits to a grounded circuit Patent  
[NASA-CASE-XAC-00086] c 09 N70-33182
- Bi-carrier demodulator with modulation Patent  
[NASA-CASE-XMF-01160] c 07 N71-11298
- Bi-polar phase detector and corrector for split phase PCM data signals Patent  
[NASA-CASE-XGS-01590] c 07 N71-12392
- Signal-to-noise ratio estimating by taking ratio of mean and standard deviation of integrated signal samples Patent  
[NASA-CASE-XNP-05254] c 07 N71-20791
- Elimination of frequency shift in a multiplex communication system Patent  
[NASA-CASE-XNP-01306] c 07 N71-20814
- Adaptive tracking notch filter system Patent  
[NASA-CASE-XMF-01892] c 10 N71-22986
- Passive synchronized spike generator with high input impedance and low output impedance and capacitor power supply Patent  
[NASA-CASE-XGS-03632] c 09 N71-23311
- Junction range finder  
[NASA-CASE-KSC-10108] c 14 N73-25461
- Television multiplexing system  
[NASA-CASE-KSC-10654-1] c 07 N73-30115
- Controlled oscillator system with a time dependent output frequency  
[NASA-CASE-NPO-11962-1] c 33 N74-10194
- Pulse code modulated signal synchronizer  
[NASA-CASE-MSC-12462-1] c 32 N74-20809
- Pulse code modulated signal synchronizer  
[NASA-CASE-MSC-12494-1] c 32 N74-20810
- Digital transmitter for data bus communications system  
[NASA-CASE-MSC-14558-1] c 32 N75-21486
- Modulator for tone and binary signals — phase of modulation of tone and binary signals on carrier waves in communication systems  
[NASA-CASE-GSC-11743-1] c 32 N75-24981
- Method and apparatus for background signal reduction in opto-acoustic absorption measurement  
[NASA-CASE-NPO-13683-1] c 35 N77-14411
- Automatic transponder — measurement of the internal delay time of a transponder  
[NASA-CASE-GSC-12075-1] c 32 N77-31350
- Fiber optic multiplex optical transmission system  
[NASA-CASE-KSC-11047-1] c 74 N78-14889
- Telephone multiline signaling using common signal pair  
[NASA-CASE-KSC-11023-1] c 32 N79-23310
- Precise RF timing signal distribution to remote stations — fiber optics  
[NASA-CASE-NPO-14749-1] c 32 N81-14186
- Digital numerically controlled oscillator  
[NASA-CASE-MSC-16747-1] c 33 N81-17349
- High stability amplifier  
[NASA-CASE-GSC-12646-1] c 33 N83-34191
- Navigation system and method  
[NASA-CASE-GSC-12508-1] c 04 N84-22546
- Doppler radar having phase modulation of both transmitted and reflected return signals  
[NASA-CASE-MSC-18675-1] c 32 N84-22820
- Doppler radar with multiphase modulation of transmitted and reflected signal  
[NASA-CASE-MSC-18808-1] c 32 N90-20280
- SIGNATURE ANALYSIS**
- Multispectral imaging and analysis system — using charge coupled devices and linear arrays  
[NASA-CASE-NPO-13691-1] c 43 N79-17288
- SILANES**
- Elastomeric silazane polymers and process for preparing the same Patent  
[NASA-CASE-XMF-04133] c 06 N71-20717
- Process for preparation of dianilinosilanes Patent  
[NASA-CASE-XMF-06409] c 06 N71-23230
- Process for preparation of high-molecular-weight polyaryloxysilanes Patent  
[NASA-CASE-XMF-08674] c 06 N71-28807
- Oxygen post-treatment of plastic surface coated with plasma polymerized silicon-containing monomers  
[NASA-CASE-ARC-10915-2] c 27 N79-18052
- Thermal reactor — liquid silicon production from silane gas  
[NASA-CASE-NPO-14369-1] c 44 N83-10501
- Process for producing tris (n-methylamino) methylsilane  
[NASA-CASE-MFS-25721-1] c 25 N85-21280
- Boron-containing organosilane polymers and ceramic materials thereof  
[NASA-CASE-ARC-11649-1-SB] c 27 N88-29040
- SILICA GEL**
- Gels as battery separators for soluble electrode cells  
[NASA-CASE-LEW-12364-1] c 44 N77-22606
- Procedure to prepare transparent silica gels  
[NASA-CASE-LAR-13476-1-CU] c 76 N87-29360
- SILICA GLASS**
- Non-toxic invert analog glass compositions of high modulus  
[NASA-CASE-HQN-10328-2] c 27 N82-29454
- High modulus rare earth and beryllium containing silicate glass compositions — for glass reinforcing fibers  
[NASA-CASE-HQN-10595-1] c 27 N82-29455
- SILICATES**
- Alkali-metal silicate protective coating  
[NASA-CASE-XGS-04119] c 18 N69-39979
- Alkali-metal silicate binders and methods of manufacture  
[NASA-CASE-GSC-12303-1] c 24 N79-31347
- SILICIDES**
- Silicide coatings for refractory metals Patent  
[NASA-CASE-XLE-10910] c 18 N71-29040

Fused silicide coatings containing discrete particles for protecting niobium alloys — used in space shuttle thermal protection systems and turbine engine components  
[NASA-CASE-LEW-11179-1] c 27 N76-16229  
Method of forming three-dimensional semiconductor structures  
[NASA-CASE-NPO-17835-1-CU] c 76 N90-27518

**SILICON**

Method of forming thin window drifted silicon charged particle detector Patent  
[NASA-CASE-XLE-00808] c 24 N71-10560  
Gd or Sm doped silicon semiconductor composition Patent  
[NASA-CASE-XLE-10715] c 26 N71-23292  
Silicon solar cell with cover glass bonded to cell by metal pattern Patent  
[NASA-CASE-XLE-08569] c 03 N71-23449  
Covered silicon solar cells and method of manufacture — with polymeric films  
[NASA-CASE-LEW-11065-2] c 44 N76-14600  
Method of controlling defect orientation in silicon crystal ribbon growth  
[NASA-CASE-NPO-13918-1] c 76 N79-11920  
Method of purifying metallurgical grade silicon employing reduced pressure atmospheric control  
[NASA-CASE-NPO-14474-1] c 26 N80-14229  
Method of producing silicon — gas phase reactor multiple injector liquid feed system  
[NASA-CASE-NPO-14382-1] c 31 N80-18231  
System for slicing silicon wafers  
[NASA-CASE-NPO-14406-1] c 37 N80-29703  
Apparatus for use in the production of ribbon-shaped crystals from a silicon melt  
[NASA-CASE-NPO-14297-1] c 33 N81-19389  
Scriber for silicon wafers  
[NASA-CASE-NPO-15539-1] c 37 N82-11469  
Method of protecting a surface with a silicon-slurry/aluminide coating — coatings for gas turbine engine blades and vanes  
[NASA-CASE-LEW-13343-1] c 27 N82-28441  
Thermal reactor — liquid silicon production from silane gas  
[NASA-CASE-NPO-14369-1] c 44 N83-10501  
Process and apparatus for growing a crystal ribbon  
[NASA-CASE-NPO-15629-1] c 76 N84-35113  
Increased voltage photovoltaic cell  
[NASA-CASE-NPO-16155-1] c 44 N85-30475  
Ribbon growing method and apparatus  
[NASA-CASE-NPO-16306-1-CU] c 76 N85-30934  
Oxidation resistant slurry coating for carbon-based materials  
[NASA-CASE-LEW-13923-1] c 26 N85-35267  
Oxygen diffusion barrier coating  
[NASA-CASE-LAR-13474-1-SB] c 26 N87-25455  
Silicon containing electroconductive polymers and structures made therefrom  
[NASA-CASE-NPO-17826-1-CU] c 27 N90-26952  
Method of forming three-dimensional semiconductor structures  
[NASA-CASE-NPO-17835-1-CU] c 76 N90-27518

**SILICON ALLOYS**

Annealing group III-V compound doped silicon-germanium alloy for improved thermo-electric conversion efficiency  
[NASA-CASE-NPO-17259-1-CU] c 76 N90-19884

**SILICON CARBIDES**

A method for the deposition of beta-silicon carbide by isopitaxy  
[NASA-CASE-ERC-10120] c 26 N69-33482  
Production of high purity silicon carbide Patent  
[NASA-CASE-XLA-00158] c 26 N70-36805  
Apparatus for producing high purity silicon carbide crystals Patent  
[NASA-CASE-XLA-02057] c 26 N70-40015  
Process for fabricating SiC semiconductor devices  
[NASA-CASE-LEW-12094-1] c 76 N76-25049  
Growth of silicon carbide crystals on a seed while pulling silicon crystals from a melt  
[NASA-CASE-NPO-13969-1] c 76 N79-23798  
High temperature silicon carbide impregnated insulating fabrics  
[NASA-CASE-MSC-18832-1] c 27 N83-18908  
Oxidation resistant slurry coating for carbon-based materials  
[NASA-CASE-LEW-13923-1] c 26 N85-35267  
Method of preparing fiber reinforced ceramic material  
[NASA-CASE-LEW-14392-1] c 27 N87-28656  
Boron-containing organosilane polymers and ceramic materials thereof  
[NASA-CASE-ARC-11649-1-SB] c 27 N88-29040

**SILICON COMPOUNDS**

Method of making a silicon semiconductor device Patent  
[NASA-CASE-XLE-02792] c 26 N71-10607

Polymerizable disilanol having in-chain perfluoroalkyl groups  
[NASA-CASE-MFS-20979-2] c 06 N73-32030  
Infusible silazane polymer and process for producing same — protective coatings  
[NASA-CASE-XMF-02526-1] c 27 N79-21190  
Silicon-slurry/aluminide coating — protecting gas turbine engine vanes and blades  
[NASA-CASE-LEW-13343] c 26 N83-31795  
Fabrication of nanometer single crystal metallic CoSi<sub>2</sub> structures on Si  
[NASA-CASE-NPO-17736-1-CU] c 76 N90-17455

**SILICON CONTROLLED RECTIFIERS**

Protection for energy conversion systems  
[NASA-CASE-XGS-04808] c 03 N69-25146  
Transient-compensated SCR inverter  
[NASA-CASE-XLA-08507] c 09 N69-39984  
Reversible ring counter employing cascaded single SCR stages Patent  
[NASA-CASE-XGS-01473] c 09 N71-10673  
SCR blocking pulse gate amplifier Patent  
[NASA-CASE-XLA-07497] c 09 N71-12514  
Combinational logic for generating gate drive signals for phase control rectifiers  
[NASA-CASE-MFS-25208-1] c 33 N83-10345

**SILICON DIOXIDE**

Intermittent type silica gel adsorption refrigerator Patent  
[NASA-CASE-XNP-00920] c 15 N71-15906  
Nose cone mounted heat resistant antenna Patent  
[NASA-CASE-XMS-04312] c 07 N71-22984  
Method and apparatus for stable silicon dioxide layers on silicon grown in silicon nitride ambient  
[NASA-CASE-ERC-10073-1] c 24 N74-19769  
Silica reusable surface insulation  
[NASA-CASE-ARC-10721-1] c 27 N76-22376  
Two-component ceramic coating for silica insulation  
[NASA-CASE-MSC-14270-1] c 27 N76-22377  
Transmitting and reflecting diffuser — using ultraviolet grade fused silica coatings  
[NASA-CASE-LAR-10385-3] c 74 N78-15879  
Field effect transistor and method of construction thereof  
[NASA-CASE-MFS-23312-1] c 33 N78-27326  
Fibrous refractory composite insulation — shielding reusable spacecraft  
[NASA-CASE-ARC-11169-1] c 24 N79-24062  
Attachment system for silica tiles — thermal protection for space shuttle orbiter  
[NASA-CASE-MSC-18741-1] c 27 N82-29456  
Pyroelectric detector arrays  
[NASA-CASE-LAR-12363-2] c 33 N83-24763  
Apparatus and method for heating a material in a transparent ampoule — crystal growth  
[NASA-CASE-MFS-25436-1] c 27 N83-36220

**SILICON FILMS**

A method for the deposition of beta-silicon carbide by isopitaxy  
[NASA-CASE-ERC-10120] c 26 N69-33482  
Pyroelectric detector arrays  
[NASA-CASE-LAR-12363-1] c 35 N82-31659  
Ingot slicing machine and method  
[NASA-CASE-NPO-15483-1] c 37 N85-21650

**SILICON JUNCTIONS**

Radiation resistant silicon semiconductor devices Patent  
[NASA-CASE-XGS-07801] c 09 N71-12513

**SILICON NITRIDES**

Method and apparatus for stable silicon dioxide layers on silicon grown in silicon nitride ambient  
[NASA-CASE-ERC-10073-1] c 24 N74-19769  
Silicon nitride coated, plastic covered solar cell  
[NASA-CASE-LEW-11496-1] c 44 N77-14580  
Sandblasting nozzle  
[NASA-CASE-NPO-13823-1] c 37 N81-25371

**SILICON OXIDES**

Three-component ceramic coating for silica insulation  
[NASA-CASE-MSC-14270-2] c 27 N76-23426

**SILICON POLYMERS**

Oxygen post-treatment of plastic surface coated with plasma polymerized silicon-containing monomers  
[NASA-CASE-ARC-10915-2] c 27 N79-18052  
Boron-containing organosilane polymers and ceramic materials thereof  
[NASA-CASE-ARC-11649-1-SB] c 27 N88-29040  
Boron-containing organosilane polymers and ceramic materials thereof  
[NASA-CASE-ARC-11649-2-SB] c 27 N90-21177

**SILICON RADIATION DETECTORS**

Thin window, drifted silicon, charged particle detector  
[NASA-CASE-XLE-10529] c 14 N69-23191  
Biomedical radiation detecting probe Patent  
[NASA-CASE-XMS-01177] c 05 N71-19440  
Imaging X-ray spectrometer  
[NASA-CASE-GSC-12682-1] c 35 N84-33765

**SILICON TRANSISTORS**

Tungsten contacts on silicon substrates  
[NASA-CASE-GSC-10695-1] c 09 N72-25259  
Method and apparatus for detecting surface ions on silicon diodes and transistors  
[NASA-CASE-ERC-10325] c 15 N72-25457

**SILICONE RESINS**

Vacuum pressure molding technique  
[NASA-CASE-LAR-10073-1] c 37 N76-24575

**SILICONES**

Silicone containing solid propellant  
[NASA-CASE-NPO-14477-1] c 28 N80-28536

**SILICONIZING**

Method of coating carbonaceous base to prevent oxidation destruction and coated base Patent  
[NASA-CASE-XLA-00284] c 15 N71-16075

**SILOXANES**

Synthesis of siloxane-containing epoxy polymers Patent  
[NASA-CASE-MFS-13994-1] c 06 N71-11240  
Method of producing alternating ether siloxane copolymers Patent  
[NASA-CASE-XMF-02584] c 06 N71-20905  
Siloxane containing epoxide compounds  
[NASA-CASE-MFS-13994-2] c 06 N72-25148  
Silphenylenesiloxane polymers having in-chain perfluoroalkyl groups  
[NASA-CASE-MFS-20979] c 06 N72-25151  
Low outgassing polydimethylsiloxane material and preparation thereof  
[NASA-CASE-GSC-11358-1] c 06 N73-26100  
Acetylene (ethynyl) terminated polyimide siloxane and process for preparation thereof  
[NASA-CASE-LAR-13318-1] c 27 N87-14516

**SILVER**

Method of making dry electrodes  
[NASA-CASE-FRC-10029-2] c 05 N72-25121  
Method for forming hermetic seals  
[NASA-CASE-NPO-16423-1-CU] c 37 N87-21334  
Carbide-fluoride-silver self-lubricating composite  
[NASA-CASE-LEW-14196-2] c 37 N87-25585

**SILVER ALLOYS**

Brazing alloy composition  
[NASA-CASE-XMF-06053] c 26 N75-27126

**SILVER CHLORIDES**

Electrode for biological recording  
[NASA-CASE-XMS-02872] c 05 N69-21925  
Bonding graphite with fused silver chloride  
[NASA-CASE-XGS-00963] c 15 N69-39735

**SILVER COMPOUNDS**

Water management system and an electrolytic cell therefor Patent  
[NASA-CASE-MSC-10960-1] c 03 N71-24718

**SILVER ZINC BATTERIES**

Electric battery and method for operating same Patent  
[NASA-CASE-XGS-01674] c 03 N71-29129  
Additive for zinc electrodes — electric automobiles  
[NASA-CASE-LEW-13286-1] c 33 N84-14422

**SIMD (COMPUTERS)**

Special purpose parallel computer architecture for real-time control and simulation in robotic applications  
[NASA-CASE-NPO-17629-1-CU] c 60 N90-27268

**SIMULATION**

Method and apparatus for simulating gravitational forces on a living organism  
[NASA-CASE-MSC-20202-1] c 54 N84-16803

**SIMULATORS**

Method and apparatus of simulating zero gravity conditions Patent  
[NASA-CASE-MFS-12750] c 27 N71-16223  
Phonocardiogram simulator Patent  
[NASA-CASE-XKS-10804] c 05 N71-24606  
Waveform simulator Patent  
[NASA-CASE-NPO-10251] c 10 N71-27365  
Laser Doppler velocity simulator — to induce frequency shift  
[NASA-CASE-LAR-12176-1] c 36 N80-16321  
Weightlessness simulation system and process  
[NASA-CASE-ARC-11646-1] c 14 N87-25344

**SIMULTANEOUS EQUATIONS**

Method and apparatus for self-calibration and phasing of array antenna  
[NASA-CASE-NPO-15920-1] c 33 N85-21493

**SINE SERIES**

Electro-mechanical sine/cosine generator  
[NASA-CASE-LAR-10503-1] c 09 N72-21248  
Function generator for synthesizing complex vibration mode patterns  
[NASA-CASE-LAR-10310-1] c 10 N73-20253

**SINE WAVES**

Waveform simulator Patent  
[NASA-CASE-NPO-10251] c 10 N71-27365  
Wide band doubler and sine wave quadrature generator  
[NASA-CASE-NPO-11133] c 10 N72-20223



Electro-mechanical sine/cosine generator  
[NASA-CASE-LAR-11389-1] c 33 N77-26387

**SINGLE CRYSTALS**  
Production of high purity silicon carbide Patent  
[NASA-CASE-XLA-00158] c 26 N70-36805  
Fabrication of single crystal film semiconductor devices  
[NASA-CASE-ERC-10222] c 09 N72-22199  
Hall effect magnetometer  
[NASA-CASE-LEW-11632-2] c 35 N75-13213  
Vapor phase growth of groups 3-5 compounds by hydrogen chloride transport of the elements  
[NASA-CASE-LAR-11144-1] c 25 N75-26043  
Method for the preparation of inorganic single crystal and polycrystalline electronic materials  
[NASA-CASE-XLE-02545-1] c 76 N78-21810  
Growth of silicon carbide crystals on a seed while pulling silicon crystals from a melt  
[NASA-CASE-NPO-13969-1] c 78 N78-23798  
Diamondlike flakes  
[NASA-CASE-LEW-13837-2] c 24 N85-21267  
Method of making macrocrystalline or single crystal semiconductor material  
[NASA-CASE-NPO-15904-1] c 76 N86-28760  
Total immersion crystal growth  
[NASA-CASE-NPO-15800-2] c 76 N87-23266  
Laser schlieren crystal monitor  
[NASA-CASE-MFS-28060-1] c 78 N87-25862  
Procedure to prepare transparent silica gels  
[NASA-CASE-LAR-13476-1-CU] c 76 N87-29360  
Fabrication of nanometer single crystal metallic CoSi<sub>2</sub> structures on Si  
[NASA-CASE-NPO-17736-1-CU] c 76 N90-17455  
Method of forming three-dimensional semiconductor structures  
[NASA-CASE-NPO-17835-1-CU] c 76 N90-27518

**SINTERING**  
Condenser - Separator  
[NASA-CASE-XLA-08845] c 15 N69-21465  
Method of producing refractory bodies having controlled porosity Patent  
[NASA-CASE-LEW-10393-1] c 17 N71-15468  
Electrodes for solid state devices  
[NASA-CASE-NPO-15161-1] c 33 N84-16456  
Method of making a light weight battery plaque  
[NASA-CASE-LEW-13349-1] c 26 N84-22734

**SIS (SUPERCONDUCTORS)**  
Edge geometry superconducting tunnel junctions utilizing an NbN/MgO/NbN thin film structure  
[NASA-CASE-NPO-17812-1-CU] c 76 N90-17456

**SIZE (DIMENSIONS)**  
Apparatus for producing metal powders  
[NASA-CASE-XLE-06461-2] c 17 N72-28535  
Torso sizing ring construction for hard space suit  
[NASA-CASE-ARC-11616-1] c 54 N86-28618

**SIZE DETERMINATION**  
Impact measuring technique  
[NASA-CASE-LAR-10913] c 14 N72-16282  
Small conductive particle sensor --- microfiber size determination  
[NASA-CASE-LAR-12552-1] c 35 N82-11431

**SIZE SEPARATION**  
Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMF-05114-2] c 15 N71-26148  
Material handling device Patent  
[NASA-CASE-XNP-09770-3] c 11 N71-27036  
Acoustic particle separation  
[NASA-CASE-NPO-15559-1] c 71 N85-30765

**SIZING (SHAPING)**  
Method and apparatus for precision sizing and joining of large diameter tubes Patent  
[NASA-CASE-XMF-05114] c 15 N71-17650

**SIZING SCREENS**  
Method of making screen by casting Patent  
[NASA-CASE-XLE-00953] c 15 N71-15966  
Screen particle separator  
[NASA-CASE-XNP-09770-2] c 15 N72-22483

**SKEWNESS**  
Tape guidance system and apparatus for the provision thereof Patent  
[NASA-CASE-XNP-09453] c 08 N71-19420  
Automatic character skew and spacing checking network --- of digital tape drive systems  
[NASA-CASE-GSC-11925-1] c 33 N76-18353

**SKID LANDINGS**  
Nose gear steering system for vehicle with main skids Patent  
[NASA-CASE-XLA-01804] c 02 N70-34160

**SKIN (ANATOMY)**  
Process for conditioning tanned sharkskin and articles made therefrom Patent  
[NASA-CASE-XMS-09691-1] c 18 N71-15545  
Percutaneous connector device  
[NASA-CASE-KSC-10849-1] c 52 N77-14738

Medical diagnosis system and method with multispectral imaging --- depth of burns and optical density of the skin  
[NASA-CASE-NPO-14402-1] c 52 N81-27783

**SKIN (STRUCTURAL MEMBER)**  
Flexibly connected support and skin Patent  
[NASA-CASE-XLA-01027] c 31 N71-24035  
Fire extinguishing apparatus having a slidable mass for a penetrator nozzle --- for penetrating aircraft and shuttle orbiter skin  
[NASA-CASE-KSC-11064-1] c 31 N81-14137

**SKIN FRICTION**  
Skin friction measuring device for aircraft  
[NASA-CASE-FRC-11029-1] c 06 N81-17057  
Hot foil transducer skin friction sensor  
[NASA-CASE-LAR-12321-1] c 35 N82-24470  
Dual-beam skin friction interferometer  
[NASA-CASE-ARC-11354-1] c 74 N83-21949  
Two-axis, self-nulling skin friction balance  
[NASA-CASE-LAR-13294-1] c 35 N86-32696  
Skin friction balance  
[NASA-CASE-LAR-13710-1] c 35 N90-17117  
Hydrodynamic skin-friction reduction  
[NASA-CASE-LAR-14078-1-CU] c 34 N90-27071

**SKIN TEMPERATURE (BIOLOGY)**  
Thermistor holder for skin temperature measurements  
[NASA-CASE-ARC-10855-1] c 52 N77-10780

**SKIN TEMPERATURE (NON-BIOLOGICAL)**  
Heat flux measuring system Patent  
[NASA-CASE-XFR-03802] c 33 N71-23085

**SKIIRTS**  
Inflatable transpiration cooled nozzle  
[NASA-CASE-MFS-20619] c 28 N72-11708

**SKY BRIGHTNESS**  
Cloud cover sensor  
[NASA-CASE-NPO-14936-1] c 47 N83-32232

**SLEEP**  
EEG sleep analyzer and method of operation Patent  
[NASA-CASE-MSC-13282-1] c 05 N71-24729

**SLEEVES**  
Energy absorbing device Patent  
[NASA-CASE-XMF-10040] c 15 N71-22877  
System for enhancing tool-exchange capabilities of a portable wrench  
[NASA-CASE-MFS-22283-1] c 37 N75-33395  
Prosthesis coupling  
[NASA-CASE-KSC-11069-1] c 52 N79-26772  
Fire extinguishing apparatus having a slidable mass for a penetrator nozzle --- for penetrating aircraft and shuttle orbiter skin  
[NASA-CASE-KSC-11064-1] c 31 N81-14137  
Tapered, tubular polyester fabric  
[NASA-CASE-MSC-21082-1] c 27 N87-29672

**SLENDER BODIES**  
A support technique for vertically oriented launch vehicles  
[NASA-CASE-XLA-02704] c 11 N69-21540

**SLICING**  
Method and apparatus for slicing crystals  
[NASA-CASE-GSC-12291-1] c 76 N80-18951  
System for slicing silicon wafers  
[NASA-CASE-NPO-14406-1] c 37 N80-29703  
Scriber for silicon wafers  
[NASA-CASE-NPO-15539-1] c 37 N82-11469  
Workpiece positioning vise  
[NASA-CASE-GSC-12762-1] c 37 N84-28083

**SLIDING**  
Hybrid butterfly valve  
[NASA-CASE-SSC-00004] c 37 N90-15443  
Low-noise nozzle valve  
[NASA-CASE-MFS-28383-1] c 34 N90-17051

**SLIDING CONTACT**  
Electrical connector pin with wiping action  
[NASA-CASE-XMF-04238] c 09 N69-39734  
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Strong thin membrane structure — solar sails  
[NASA-CASE-NPO-14021-2] c 27 N80-16163

Speed control device for a heavy duty shaft — solar sails for spacecraft propulsion  
[NASA-CASE-NPO-14170-1] c 37 N81-15384

**SOLAR SENSORS**

Plurality of photosensitive cells on a pyramidal base for planetary trackers  
[NASA-CASE-XNP-04180] c 07 N69-39736

Space vehicle attitude control Patent  
[NASA-CASE-NPO-00485] c 21 N70-35395

Sun tracker with rotatable plane-parallel plate and two photocells Patent  
[NASA-CASE-XGS-01159] c 21 N71-10678

Solar sensor having coarse and fine sensing with matched preirradiated cells and method of selecting cells Patent  
[NASA-CASE-XLA-01584] c 14 N71-23269

Sun direction detection system  
[NASA-CASE-NPO-13722-1] c 74 N77-22951

Sun tracking solar energy collector  
[NASA-CASE-NPO-13921-1] c 44 N79-14526

Solar tracking system  
[NASA-CASE-MFS-23999-1] c 44 N81-24520

Sun sensing guidance system for high altitude aircraft  
[NASA-CASE-FRC-11052-1] c 04 N82-23231

Cloud cover sensor  
[NASA-CASE-NPO-14936-1] c 47 N83-32232

Airborne tracking sunphotometer apparatus and system  
[NASA-CASE-ARC-11622-1] c 44 N88-14492

**SOLAR SIMULATORS**

High temperature lens construction Patent  
[NASA-CASE-XNP-04111] c 14 N71-15622

High powered arc electrodes — producing solar simulator radiation  
[NASA-CASE-LEW-11162-1] c 33 N74-12913

**SOLAR-PUMPED LASERS**

Long gain length solar pumped box laser  
[NASA-CASE-LAR-13256-1] c 36 N86-29204

**SOLDERED JOINTS**

Soldering device Patent  
[NASA-CASE-XLA-08911] c 15 N71-27214

**SOLDERING**

Solder flux which leaves corrosion-resistant coating Patent  
[NASA-CASE-XNP-03459-2] c 18 N71-15688

Soldering with solder flux which leaves corrosion resistant coating Patent  
[NASA-CASE-XNP-03459] c 15 N71-21078

Method of plating copper on aluminum Patent  
[NASA-CASE-XLA-08966-1] c 17 N71-25903

Resistance soldering apparatus  
[NASA-CASE-GSC-10913] c 15 N72-22491

Positive contact resistance soldering unit  
[NASA-CASE-KSC-10242] c 15 N72-23497

Bonding machine for forming a solar array strip  
[NASA-CASE-NPO-13652-2] c 44 N78-24431

**SOLDERS**

Method of coating circuit paths on printed circuit boards with solder Patent  
[NASA-CASE-XMF-01599] c 09 N71-20705

Method for attaching a fused-quartz mirror to a conductive metal substrate  
[NASA-CASE-MFS-23405-1] c 26 N77-29260

**SOLENOID VALVES**

Two-step rocket engine bipropellant valve Patent  
[NASA-CASE-XMS-04890-1] c 15 N70-22192

Automatic recording McLeod gauge Patent  
[NASA-CASE-XLE-03280] c 14 N71-23093

Solenoid valve including guide for armature and valve member  
[NASA-CASE-GSC-10607-1] c 15 N72-20442

Remote fire stack igniter — with solenoid-controlled valve  
[NASA-CASE-MFS-21675-1] c 25 N74-33378

Automatically operable self-leveling load valve  
[NASA-CASE-MFS-22039-1] c 09 N75-12968

Self-compensating solenoid valve  
[NASA-CASE-ARC-11620-1] c 37 N87-25573

**SOLENOIDS**

Solenoid construction Patent  
[NASA-CASE-XNP-01951] c 09 N70-41929

Drive circuit for minimizing power consumption in inductive load Patent  
[NASA-CASE-NPO-10716] c 09 N71-24892

Rotary solenoid shutter drive assembly and rotary inertia damper and stop plate assembly — for use with cameras mounted in satellites  
[NASA-CASE-GSC-11560-1] c 33 N74-20861

Sprag solenoid brake — development and operations of electrically controlled brake  
[NASA-CASE-MFS-21846-1] c 37 N74-26976

Low temperature latching solenoid  
[NASA-CASE-MSC-18106-1] c 33 N82-11357

**SOLID CRYOGEN COOLING**  
Cooling by conversion of para to ortho-hydrogen  
[NASA-CASE-GSC-12770-1] c 25 N83-29324

**SOLID ELECTRODES**  
Polymeric electrolytic hygrometer  
[NASA-CASE-NPO-13948-1] c 35 N78-25391

Additive for zinc electrodes — electric automobiles  
[NASA-CASE-LEW-13286-1] c 33 N84-14422

**SOLID LUBRICANTS**  
Bonded solid lubricant coating Patent  
[NASA-CASE-XMS-00259] c 18 N70-36400

Method of lubricating rolling element bearings Patent  
[NASA-CASE-XLE-09527] c 15 N71-17888

Inorganic solid film lubricants Patent  
[NASA-CASE-XMF-03888] c 15 N71-21403

Rolling element bearings Patent  
[NASA-CASE-XLE-09527-2] c 15 N71-26189

Method of making bearing materials — self-lubricating, oxidation resistant composites for high temperature applications  
[NASA-CASE-LEW-11830-4] c 24 N79-17916

**SOLID PHASES**  
Solid electrolyte cell  
[NASA-CASE-NPO-15269-1] c 44 N82-29710

**SOLID PROPELLANT IGNITION**  
Apparatus for igniting solid propellants Patent  
[NASA-CASE-XLE-00207] c 28 N70-33375

Method of igniting solid propellants Patent  
[NASA-CASE-XLE-01888] c 27 N71-15634

Molded composite pyrogen igniter for rocket motors — solid propellant ignition  
[NASA-CASE-LAR-12018-1] c 20 N78-24275

Method and apparatus for suppressing ignition overpressure in solid rocket propulsion systems  
[NASA-CASE-MFS-25843-1] c 20 N83-17588

**SOLID PROPELLANT ROCKET ENGINES**  
Spherical solid-propellant rocket motor Patent  
[NASA-CASE-XLA-00105] c 28 N70-33331

Mandrel for shaping solid propellant rocket fuel into a motor casing Patent  
[NASA-CASE-XLA-00304] c 27 N70-34783

Spherically-shaped rocket motor Patent  
[NASA-CASE-XHQ-01897] c 28 N70-35381

Propellant grain for rocket motors Patent  
[NASA-CASE-XGS-03556] c 27 N70-35534

Apparatus and method for control of a solid fueled rocket vehicle Patent  
[NASA-CASE-XNP-00217] c 28 N70-38181

Steerable solid propellant rocket motor Patent  
[NASA-CASE-XNP-00234] c 28 N70-38845

Method of making a solid propellant rocket motor Patent  
[NASA-CASE-XLA-04126] c 28 N71-26779

Electrical apparatus for detection of thermal decomposition of insulation Patent  
[NASA-CASE-XMF-03968] c 14 N71-27186

Solid propellant rocket motor  
[NASA-CASE-XNP-03282] c 28 N72-20758

Solid propellant rocket motor nozzle  
[NASA-CASE-NPO-11458] c 28 N72-23810

Solid propellant rocket motor  
[NASA-CASE-NPO-11559] c 28 N73-24784

Space vehicle  
[NASA-CASE-MFS-22734-1] c 18 N75-19329

Solid propellant rocket motor and method of making same  
[NASA-CASE-XLA-01349] c 20 N77-17143

Molded composite pyrogen igniter for rocket motors — solid propellant ignition  
[NASA-CASE-LAR-12018-1] c 20 N78-24275

Solid propellant motor  
[NASA-CASE-NPO-11458A] c 20 N78-32179

Method and apparatus for suppressing ignition overpressure in solid rocket propulsion systems  
[NASA-CASE-MFS-25843-1] c 20 N83-17588

Space Shuttle with rail system and aft thrust structure securing solid rocket boosters to external tank  
[NASA-CASE-MFS-25853-1] c 16 N84-27784

**SOLID PROPELLANTS**  
Variable thrust ion engine utilizing thermally decomposable solid fuel Patent  
[NASA-CASE-XMF-00923] c 28 N70-36802

Means and method of measuring viscoelastic strain Patent  
[NASA-CASE-XNP-01153] c 32 N71-17645

Processing for producing a, sterilized instrument Patent  
[NASA-CASE-XNP-08763] c 14 N71-20461

Method of forming difunctional polyisobutylene  
[NASA-CASE-NPO-10893] c 27 N73-22710

**SOLID ROCKET BINDERS**  
Solid propellant liner Patent  
[NASA-CASE-XNP-09744] c 27 N71-16392

Silicone containing solid propellant  
[NASA-CASE-NPO-14477-1] c 28 N80-28536

**SOLID ROCKET PROPELLANTS**  
Process for preparing sterile solid propellants Patent  
[NASA-CASE-XNP-01749] c 27 N70-41897

Burning rate control of solid propellants Patent  
[NASA-CASE-XLE-03494] c 27 N71-21819

Hydrazinium nitroformate propellant stabilized with nitroguanidine  
[NASA-CASE-NPO-12000] c 27 N72-25699

Hydrazinium nitroformate propellant with saturated polymeric hydrocarbon binder  
[NASA-CASE-NPO-12015] c 27 N73-16764

Preparing oxidizer coated metal fuel particles  
[NASA-CASE-NPO-11975-1] c 28 N74-33209

Casting propellant in rocket engine  
[NASA-CASE-LAR-11895-1] c 28 N77-10213

Solid propellant rocket motor and method of making same  
[NASA-CASE-XLA-01349] c 20 N77-17143

High performance ammonium nitrate propellant  
[NASA-CASE-NPO-14260-1] c 28 N79-28342

Process for the leaching of AP from propellant  
[NASA-CASE-NPO-14109-1] c 28 N80-23471

Silicone containing solid propellant  
[NASA-CASE-NPO-14477-1] c 28 N80-28536

**SOLID STATE**  
Solid state chemical source for ammonia beam maser Patent  
[NASA-CASE-XGS-01504] c 16 N70-41578

**SOLID STATE DEVICES**  
Solid state switch  
[NASA-CASE-XNP-09228] c 09 N69-27500

Temperature compensated solid state differential amplifier Patent  
[NASA-CASE-XAC-00435] c 09 N70-35440

Operational integrator Patent  
[NASA-CASE-NPO-10230] c 09 N71-12520

Microwave power receiving antenna Patent  
[NASA-CASE-MFS-20333] c 09 N71-13486

Counter and shift register Patent  
[NASA-CASE-XNP-01753] c 08 N71-22897

Solid state television camera system Patent  
[NASA-CASE-XMF-06092] c 07 N71-24612

Switching circuit Patent  
[NASA-CASE-XNP-06505] c 10 N71-24799

Transverse piezoresistance and pinch effect electromechanical transducers Patent  
[NASA-CASE-ERC-10088] c 26 N71-25490

A solid state acoustic variable time delay line Patent  
[NASA-CASE-ERC-10032] c 10 N71-25900

Broadband stable power multiplier Patent  
[NASA-CASE-XNP-10854] c 10 N71-26331

Solid state remote circuit selector switch  
[NASA-CASE-LEW-10387] c 09 N72-22201

RF controlled solid state switch  
[NASA-CASE-ARC-10136-1] c 09 N72-22202

Thermal to electrical power conversion system with solid-state switches with Seebeck effect compensation  
[NASA-CASE-NPO-11388] c 03 N72-23048

Radiation sensitive solid state switch  
[NASA-CASE-NPO-10817-1] c 08 N73-30135

Full wave modulator-demodulator amplifier apparatus — for generating rectified output signal  
[NASA-CASE-FRC-10072-1] c 33 N74-14939

Traveling wave solid state amplifier utilizing a semiconductor with negative differential mobility  
[NASA-CASE-HQN-10069] c 33 N75-27251

Solid-state current transformer  
[NASA-CASE-MFS-22560-1] c 33 N77-14335

Space-charge-limited solid-state triode  
[NASA-CASE-NPO-13064-1] c 33 N79-11314

Control means for a solid state crossbar switch  
[NASA-CASE-NPO-15066-1] c 33 N82-29538

Self-correcting electronically scanned pressure sensor  
[NASA-CASE-LAR-12686-1] c 35 N84-14491

Imaging X-ray spectrometer  
[NASA-CASE-GSC-12682-1] c 35 N84-33765

Solar energy converter using surface plasma waves  
[NASA-CASE-LEW-13827-1] c 44 N85-21768

Hermetically sealable package for hybrid solid-state electronic devices and the like  
[NASA-CASE-MSC-20181-1] c 33 N88-23941

Solid state electrical switch employing materials with reversible phase transistors  
[NASA-CASE-NPO-17821-1-CU] c 33 N90-17010

**SOLID SURFACES**

Dye penetrant for surfaces subsequently contacted by liquid oxygen Patent  
[NASA-CASE-XMF-02221] c 18 N71-27170

**SOLID WASTES**

Process of forming catalytic surfaces for wet oxidation reactions  
[NASA-CASE-MSC-14831-1] c 25 N78-10225

**SOLID-SOLID INTERFACES**

Coal-shale interface detection  
[NASA-CASE-MFS-23720-3] c 43 N79-25443

**SOLIDIFICATION**

Method and apparatus for supercooling and solidifying substances  
[NASA-CASE-MFS-25242-1] c 35 N83-29650

**SOLIDIFICATION**

Hot melt adhesive attachment pad  
[NASA-CASE-LAR-12894-1] c 27 N85-20125

Method of preparing radially homogeneous mercury cadmium telluride crystals  
[NASA-CASE-MFS-25786-2] c 76 N90-20896

Solidification processing of alloys using an applied electric field  
[NASA-CASE-MFS-26083-1-CU] c 26 N90-26940

**SOLIDIFIED GASES**

Cooling by conversion of para to ortho-hydrogen  
[NASA-CASE-GSC-12770-1] c 25 N83-29324

**SOLIDS FLOW**

Use of glow discharge in fluidized beds  
[NASA-CASE-ARC-11245-1] c 28 N82-18401

**SOLUBILITY**

Fire resistant coating composition Patent  
[NASA-CASE-GSC-10072] c 18 N71-14014

Insoluble polyelectrolyte and ion-exchange hollow fiber impregnated therewith  
[NASA-CASE-NPO-13530-1] c 25 N81-17187

Method for the preparation of thin-skinned asymmetric reverse osmosis membranes and products thereof  
[NASA-CASE-ARC-11359-1] c 51 N84-28361

Method for growth of crystals by pressure reduction of supercritical or subcritical solution  
[NASA-CASE-NPO-15772-1] c 76 N85-29800

Passivation of high temperature superconductors  
[NASA-CASE-NPO-17949-1-CU] c 76 N90-26684

**SOLUTES**

Specific wavelength colorimeter — for measuring given solute concentration in test sample  
[NASA-CASE-MSC-14081-1] c 35 N74-27880

**SOLUTIONS**

Method and apparatus for minimizing convection during crystal growth from solution  
[NASA-CASE-NPO-15811-1] c 76 N84-12968

Preparation of dilute magnetic semiconductor films by metalorganic chemical vapor deposition  
[NASA-CASE-NPO-17399-1-CU] c 76 N89-14120

**SOLVENT EXTRACTION**

Recovery of aluminum from composite propellants  
[NASA-CASE-NPO-14110-1] c 28 N81-15119

Supercritical multicomponent solvent coal extraction  
[NASA-CASE-NPO-15767-1] c 23 N84-16255

Infusion extractor  
[NASA-CASE-MSC-20761-1] c 37 N87-15465

**SOLVENTS**

Coal desulfurization — using iron pentacarbonyl  
[NASA-CASE-NPO-14272-1] c 25 N81-33246

Supercritical solvent coal extraction  
[NASA-CASE-NPO-15210-1] c 25 N84-22709

Process for producing tris (n-methylamino) methylsilane  
[NASA-CASE-MFS-25721-1] c 25 N85-21280

Method for growth of crystals by pressure reduction of supercritical or subcritical solution  
[NASA-CASE-NPO-15772-1] c 76 N85-29800

Production of butanol by fermentation in the presence of cocultures of clostridium  
[NASA-CASE-NPO-16203-1] c 23 N85-35227

Acetylene terminated aspartamides and resins therefrom  
[NASA-CASE-LAR-14188-1] c 27 N90-23545

Imide/arylene ether copolymers  
[NASA-CASE-LAR-14159-1-CU] c 27 N90-26953

Aromatic polyimides containing a dimethylsilane-linked dianhydride  
[NASA-CASE-LAR-14198-1] c 27 N90-26956

**SONAR**

Method for shaping and aiming narrow beams — sonar mapping and target identification  
[NASA-CASE-NPO-14632-1] c 32 N82-18443

Echo tracker/range finder for radars and sonars  
[NASA-CASE-NPO-14361-1] c 32 N82-23376

**SONIC BOOMS**

Instrumentation for measurement of aircraft noise and sonic boom  
[NASA-CASE-LAR-11173-1] c 35 N75-19614

- Instrumentation for measuring aircraft noise and sonic boom  
[NASA-CASE-LAR-11476-1] c 07 N76-27232
- SORBATES**  
Apparatus for measuring a sorbate dispersed in a fluid stream  
[NASA-CASE-ARC-10896-1] c 35 N78-19465
- SORBENTS**  
Regenerative Cu La zeolite supported desulfurizing sorbents  
[NASA-CASE-NPO-17480-1-CU] c 25 N90-26088  
Multicomponent gas sorption Joule-Thomson refrigerator  
[NASA-CASE-NPO-17569-1-CU] c 31 N90-26176
- SORET COEFFICIENT**  
Method of growing composites of the type exhibiting the Soret effect — improved structure of eutectic alloy crystals  
[NASA-CASE-MFS-22826-1] c 24 N77-27187
- SORPTION**  
Two stage sorption type cryogenic refrigerator including heat regeneration system  
[NASA-CASE-NPO-17630-1-CU] c 31 N89-29577  
Multicomponent gas sorption Joule-Thomson refrigerator  
[NASA-CASE-NPO-17569-1-CU] c 31 N90-26176
- SOUND GENERATORS**  
Ejectable underwater sound source recovery assembly  
[NASA-CASE-LAR-10595-1] c 35 N74-16135  
Acoustic suspension system  
[NASA-CASE-NPO-15435-1] c 71 N83-36846  
Acoustic agglomeration methods and apparatus  
[NASA-CASE-NPO-15466-1] c 71 N85-22104
- SOUND LOCALIZATION**  
Resolution enhanced sound detecting apparatus  
[NASA-CASE-NPO-14134-1] c 71 N79-23753
- SOUND PRESSURE**  
Instrumentation for measurement of aircraft noise and sonic boom  
[NASA-CASE-LAR-11173-1] c 35 N75-19814  
Differential sound level meter  
[NASA-CASE-LAR-12106-1] c 71 N78-14867
- SOUND PROPAGATION**  
System for plotting subsoil structure and method therefor  
[NASA-CASE-NPO-14191-1] c 31 N80-32584  
Sound attenuation apparatus  
[NASA-CASE-LAR-13968-1] c 71 N90-15710
- SOUND RANGING**  
Echo tracker/range finder for radars and sonars  
[NASA-CASE-NPO-14361-1] c 32 N82-23376
- SOUND TRANSDUCERS**  
Method for detecting hydrogen gas  
[NASA-CASE-XMF-03873] c 06 N69-39733  
Cosmic dust sensor  
[NASA-CASE-GSC-10503-1] c 14 N72-20381  
Resolution enhanced sound detecting apparatus  
[NASA-CASE-NPO-14134-1] c 71 N79-23753  
Pulse transducer with artifact signal attenuator — heart rate sensors  
[NASA-CASE-FRC-11012-1] c 52 N80-23969  
Acoustic system for material transport  
[NASA-CASE-NPO-15453-1] c 71 N83-32515  
Vibrating-chamber levitation systems  
[NASA-CASE-NPO-16142-1-CU] c 35 N88-20752
- SOUND TRANSMISSION**  
Sound attenuation apparatus  
[NASA-CASE-LAR-13968-1] c 71 N90-15710
- SOUND WAVES**  
Phonocardiograph transducer Patent  
[NASA-CASE-XMS-05365] c 14 N71-22993  
Material suspension within an acoustically excited resonant chamber — at near weightless conditions  
[NASA-CASE-NPO-13263-1] c 12 N75-24774  
Acoustic energy shaping  
[NASA-CASE-NPO-13802-1] c 71 N78-10837  
Acoustic driving of rotor  
[NASA-CASE-NPO-14005-1] c 71 N79-20827  
Acoustic bubble removal method  
[NASA-CASE-NPO-15334-1] c 71 N83-35781  
Acoustic ground impedance meter  
[NASA-CASE-LAR-12995-1] c 35 N84-22933  
Acoustic rotation control  
[NASA-CASE-NPO-15689-1] c 71 N84-23233  
Acoustic agglomeration methods and apparatus  
[NASA-CASE-NPO-15466-1] c 71 N85-22104  
Dual differential interferometer  
[NASA-CASE-LAR-12966-1] c 35 N85-30282  
Acoustic particle separation  
[NASA-CASE-NPO-15559-1] c 71 N85-30765  
Acoustic radiation stress measurement  
[NASA-CASE-LAR-13440-1] c 71 N87-21653  
Rapidly quantifying the relative distention of a human bladder  
[NASA-CASE-LAR-13901-1-NP] c 52 N90-21519
- Impact tolerant material  
[NASA-CASE-LAR-12887-3] c 24 N90-21822
- SOUNDING ROCKETS**  
Altitude control system for sounding rockets Patent  
[NASA-CASE-XGS-01654] c 31 N71-24750  
Method and system for ejecting fairing sections from a rocket vehicle  
[NASA-CASE-GSC-10590-1] c 31 N73-14853
- SPACE CAPSULES**  
Assembly for recovering a capsule Patent  
[NASA-CASE-XMF-00641] c 31 N70-38410  
Space capsule Patent  
[NASA-CASE-XLA-01332] c 31 N71-15684  
Space capsule ejection assembly Patent  
[NASA-CASE-XMF-03169] c 31 N71-15675
- SPACE CHARGE**  
Space-charge-limited solid-state triode  
[NASA-CASE-NPO-13064-1] c 33 N79-11314
- SPACE COMMUNICATION**  
Multiple input radio receiver Patent  
[NASA-CASE-XLA-00901] c 07 N71-10775  
Tracking receiver Patent  
[NASA-CASE-XGS-08679] c 10 N71-21473  
Apparatus providing a directive field pattern and attitude sensing of a spin stabilized satellite Patent  
[NASA-CASE-XGS-02607] c 31 N71-23009  
Space communication system for compressed data with a concatenated Reed-Solomon-Viterbi coding channel  
[NASA-CASE-NPO-13545-1] c 32 N77-12240
- SPACE DEBRIS**  
Semi-active orbital debris sweeper  
[NASA-CASE-MSC-21534-1] c 18 N90-26860
- SPACE ENVIRONMENT SIMULATION**  
Voltage-current characteristic simulator Patent  
[NASA-CASE-XMS-01554] c 10 N71-10578  
Fluid dispensing apparatus and method Patent  
[NASA-CASE-XLE-01182] c 27 N71-15635  
Reduced gravity simulator Patent  
[NASA-CASE-XLA-01787] c 11 N71-16028  
Apparatus for measuring electric field strength on the surface of a model vehicle Patent  
[NASA-CASE-XLE-02038] c 09 N71-16086  
Optical characteristics measuring apparatus Patent  
[NASA-CASE-XNP-08840] c 23 N71-16365  
Omni-directional anisotropic molecular trap Patent  
[NASA-CASE-XGS-00783] c 30 N71-17788  
Space environmental work simulator Patent  
[NASA-CASE-XMF-07488] c 11 N71-18773  
Mechanical simulator of low gravity conditions Patent  
[NASA-CASE-MFS-10555] c 11 N71-19494  
Self-lubricating fluoride metal composite materials Patent  
[NASA-CASE-XLE-08511] c 18 N71-23710  
Autolignition test cell Patent  
[NASA-CASE-KSC-10198] c 11 N71-28629  
Illumination system including a virtual light source Patent  
[NASA-CASE-HQN-10781] c 23 N71-30292  
Underwater space suit pressure control regulator  
[NASA-CASE-MFS-20332] c 05 N72-20097  
Diffuser/ejector system for a very high vacuum environment  
[NASA-CASE-MFS-25791-1] c 09 N84-27749  
Variable energy, high flux, ground-state atomic oxygen source  
[NASA-CASE-NPO-16640-1-CU] c 72 N87-21661
- SPACE ERECTABLE STRUCTURES**  
Flexible foam erectable space structures Patent  
[NASA-CASE-XLA-00686] c 31 N70-34135  
Erectable modular space station Patent  
[NASA-CASE-XLA-00678] c 31 N70-34296  
Manned space station Patent  
[NASA-CASE-XLA-00258] c 31 N70-38676  
Collapsible loop antenna for space vehicle Patent  
[NASA-CASE-XMF-00437] c 07 N70-40202  
Passive communication satellite Patent  
[NASA-CASE-XLA-00210] c 30 N70-40309  
Flexible wing deployment device Patent  
[NASA-CASE-XLA-01220] c 02 N70-41863  
Capillary radiator Patent  
[NASA-CASE-XLE-03307] c 33 N71-14035  
Space manufacturing machine Patent  
[NASA-CASE-MFS-20410] c 15 N71-19214  
Roll-up solar array Patent  
[NASA-CASE-NPO-10188] c 03 N71-20273  
Collapsible reflector Patent  
[NASA-CASE-XMS-03454] c 09 N71-20658  
Inflatable support structure Patent  
[NASA-CASE-XLA-01731] c 32 N71-21045  
Radiator deployment actuator Patent  
[NASA-CASE-MSC-11817-1] c 15 N71-26611  
Inflatable tether Patent  
[NASA-CASE-XMS-10993] c 15 N71-28936  
Expandable space frames  
[NASA-CASE-ERC-10365-1] c 31 N73-32749
- Apparatus for assembling space structure  
[NASA-CASE-MFS-23579-1] c 18 N79-11108  
Lightweight structural columns — space erectable trusses  
[NASA-CASE-LAR-12095-1] c 31 N81-25258  
Telescoping columns — parabolic antenna support  
[NASA-CASE-LAR-12195-1] c 31 N81-27324  
Joint for deployable structures  
[NASA-CASE-NPO-16038-1] c 37 N86-19605  
Foldable self-erecting joint  
[NASA-CASE-MSC-20635-1] c 18 N87-14373  
Bi-stem gripping apparatus  
[NASA-CASE-MFS-28185-1] c 37 N88-23979  
Clevis joint for deployable space structures  
[NASA-CASE-LAR-13898-1] c 37 N88-30130  
Space station erectable manipulator placement system  
[NASA-CASE-MSC-21096-1] c 18 N89-12621  
Antenna surface contour control system  
[NASA-CASE-LAR-13798-1] c 32 N89-25363
- SPACE EXPLORATION**  
Vehicle for use in planetary exploration  
[NASA-CASE-NPO-11366] c 11 N73-26238
- SPACE FLIGHT**  
Portable environmental control system Patent  
[NASA-CASE-XMS-09632-1] c 05 N71-11203  
Television simulation for aircraft and space flight Patent  
[NASA-CASE-XFR-03107] c 09 N71-19449
- SPACE FLIGHT FEEDING**  
Helmet feedport  
[NASA-CASE-XMS-09653] c 54 N78-17680  
Self-charging metering and dispensing device for fluids  
[NASA-CASE-MSC-20275-1] c 35 N85-21585
- SPACE INDUSTRIALIZATION**  
Apparatus for assembling space structure  
[NASA-CASE-MFS-23579-1] c 18 N79-11108
- SPACE MAINTENANCE**  
Thruster maintenance system Patent  
[NASA-CASE-MFS-20325] c 28 N71-27095  
Hot melt recharge system — repairing damaged or missing tiles on space shuttle orbiter  
[NASA-CASE-LAR-12881-1] c 27 N84-14323
- SPACE MANUFACTURING**  
Material suspension within an acoustically excited resonant chamber — at near weightless conditions  
[NASA-CASE-NPO-13263-1] c 12 N75-24774  
Method for manufacturing mirrors in zero gravity environment  
[NASA-CASE-MSC-12611-1] c 12 N76-15189  
Apparatus for assembling space structure  
[NASA-CASE-MFS-23579-1] c 18 N79-11108  
Structural members, method and apparatus  
[NASA-CASE-MSC-16217-1] c 31 N81-27323  
Low gravity exothermic heating/cooling apparatus  
[NASA-CASE-MSC-25707-1] c 35 N85-29214
- SPACE MISSIONS**  
Method of planetary atmospheric investigation using a split-trajectory dual flyby mode Patent  
[NASA-CASE-XAC-08494] c 30 N71-15990  
Deep space monitor communication satellite system Patent  
[NASA-CASE-XAC-06029-1] c 31 N71-24813  
A method of delivering a vehicle to earth orbit and returning the reusable portion thereof to earth  
[NASA-CASE-MSC-12391] c 30 N73-12884
- SPACE NAVIGATION**  
Trigonometric vehicle guidance assembly which aligns the three perpendicular axes of two three-axes systems Patent  
[NASA-CASE-XMF-00684] c 21 N71-21688  
Dual purpose momentum wheels for spacecraft with magnetic recording  
[NASA-CASE-NPO-11481] c 21 N73-13644  
Star tracking reticles and process for the production thereof  
[NASA-CASE-GSC-11188-2] c 21 N73-19630
- SPACE ORIENTATION**  
Method and apparatus for determining satellite orientation utilizing spatial energy sources Patent  
[NASA-CASE-XGS-00466] c 21 N70-34297
- SPACE PLATFORMS**  
Joint for deployable structures  
[NASA-CASE-NPO-16038-1] c 37 N86-19605  
Mobile remote manipulator vehicle system  
[NASA-CASE-LAR-13393-1] c 54 N87-29118  
Expandable pellet for space station interface attachments  
[NASA-CASE-MSC-21117-1] c 18 N88-28958
- SPACE PROBES**  
Space probe/satellite ejection apparatus for spacecraft  
[NASA-CASE-MFS-15429-1] c 18 N84-22609

## SPACE PROCESSING

- Exothermic furnace module  
[NASA-CASE-MFS-25707-1] c 35 N82-26631
- High gradient directional solidification furnace  
[NASA-CASE-MFS-25963-1] c 35 N86-20750
- Infusion extractor  
[NASA-CASE-MSC-20761-1] c 37 N87-15465
- Space ultra-vacuum facility and method of operation  
[NASA-CASE-MFS-28139-1] c 29 N87-18679
- Sample levitation and melt in microgravity  
[NASA-CASE-NPO-17022-1-CU] c 29 N87-25489
- Method of dispensing reagent chemicals in space  
[NASA-CASE-LAR-13607-1-CU] c 29 N88-29048
- Spiral vane bio reactor  
[NASA-CASE-MSC-21361-1] c 51 N89-25557

## SPACE RENDEZVOUS

- Method and apparatus for securing to a spacecraft  
Patent  
[NASA-CASE-MFS-11133] c 31 N71-16222
- Apparatus for releasably connecting first and second  
objects in predetermined space relationship  
[NASA-CASE-MSC-18969-1] c 18 N84-22605
- Rotatable electric cable connecting system  
[NASA-CASE-GSC-12899-1] c 33 N86-20669

## SPACE SHUTTLE BOOSTERS

- Space Shuttle with rail system and aft thrust structure  
securing solid rocket boosters to external tank  
[NASA-CASE-MFS-25853-1] c 16 N84-27784

## SPACE SHUTTLE ORBITERS

- Surface conforming thermal/pressure seal — tail  
assemblies of space shuttle orbiters  
[NASA-CASE-MSC-18422-1] c 37 N82-16408
- CAM controlled retractable door latch  
[NASA-CASE-MSC-20304-1] c 37 N82-31690
- High temperature glass thermal control structure and  
coating — for application to spacecraft reusable heat  
shielding  
[NASA-CASE-ARC-11164-1] c 44 N83-34448
- Hot melt recharge system — repairing damaged or  
missing tiles on space shuttle orbiter  
[NASA-CASE-LAR-12881-1] c 27 N84-14323
- Pre-stressed thermal protection systems  
[NASA-CASE-MSC-20254-1] c 16 N84-22601
- Space Shuttle with rail system and aft thrust structure  
securing solid rocket boosters to external tank  
[NASA-CASE-MFS-25853-1] c 16 N84-27784
- Shell tile thermal protection system  
[NASA-CASE-LAR-12862-1] c 27 N84-27886

## SPACE SHUTTLE PAYLOADS

- Space station architecture, module, berthing hub, shell  
assembly, berthing mechanism and utility connection  
channel  
[NASA-CASE-ARC-11505-1] c 18 N84-22612
- Shuttle-launch triangular space station  
[NASA-CASE-MSC-20676-1] c 18 N86-24729
- Payload deployment method and system  
[NASA-CASE-MSC-21330-1] c 16 N88-24660

## SPACE SHUTTLES

- Flight craft Patent  
[NASA-CASE-XAC-02058] c 02 N71-16087
- A method of delivering a vehicle to earth orbit and  
returning the reusable portion thereof to earth  
[NASA-CASE-MSC-12391] c 30 N73-12884
- Space shuttle vehicle and system  
[NASA-CASE-MSC-12433] c 31 N73-14854
- Variable ratio mixed-mode bilateral master-slave control  
system for shuttle remote manipulator system  
[NASA-CASE-MSC-14245-1] c 18 N75-27041
- Fused silicide coatings containing discrete particles for  
protecting niobium alloys — used in space shuttle thermal  
protection systems and turbine engine components  
[NASA-CASE-LEW-11179-1] c 27 N76-16229
- Device for coupling a first vehicle to a second vehicle  
[NASA-CASE-GSC-12429-1] c 37 N81-14320
- System for sterilizing objects — cleaning space vehicle  
systems  
[NASA-CASE-KSC-11085-1] c 54 N81-24724
- Terminal guidance sensor system — space shuttle  
coupling to orbiting satellites  
[NASA-CASE-NPO-14521-1] c 37 N81-27519
- Adjustable high emittance gap filler — reentry shielding  
for space shuttle vehicles  
[NASA-CASE-ARC-11310-1] c 27 N82-24339
- Hemispherical latching apparatus  
[NASA-CASE-MFS-25837-1] c 18 N85-29991
- Slide release mechanism — for space shuttle  
orbiter/external tank connection device  
[NASA-CASE-MSC-20080-1] c 37 N85-30334
- Preloaded brake disc  
[NASA-CASE-MSC-21132-1] c 37 N88-29181
- Emergency egress fixed rocket package  
[NASA-CASE-MSC-21332-1] c 03 N89-11724
- Docking mechanism for spacecraft  
[NASA-CASE-MSC-21386-1] c 18 N90-20126

## SPACE SIMULATORS

- Space simulator Patent  
[NASA-CASE-XNP-00459] c 11 N70-38675
- Variable geometry manned orbital vehicle Patent  
[NASA-CASE-XLA-03691-1] c 31 N71-15674
- Space simulation and radiative property testing system  
and method Patent  
[NASA-CASE-MFS-20096] c 14 N71-30026
- Biocentrifuge system capable of exchanging specimen  
cages while in operational mode  
[NASA-CASE-MFS-23825-1] c 51 N81-32829

## SPACE STATION STRUCTURES

- Mobile remote manipulator system for a tetrahedral  
truss  
[NASA-CASE-MSC-20985-1] c 18 N88-26398
- Smart tunnel: Docking mechanism  
[NASA-CASE-MSC-21360-1] c 18 N89-25263
- Expandable pallet for space station interface  
attachments  
[NASA-CASE-MSC-21117-2] c 18 N89-28554
- Overcenter collet space station truss fastener  
[NASA-CASE-MSC-21504-1] c 18 N90-26859

## SPACE STATIONS

- Manned space station Patent  
[NASA-CASE-XLA-00258] c 31 N70-38676
- Radial module space station Patent  
[NASA-CASE-XMS-01906] c 31 N70-41373
- Serpentuator Patent  
[NASA-CASE-XMF-05344] c 31 N71-16345
- Space manufacturing machine Patent  
[NASA-CASE-MSC-20410] c 15 N71-19214
- Meteoroid impact position locator aid for manned space  
station  
[NASA-CASE-LAR-10629-1] c 35 N75-33367
- Multiple in-line docking capability for rotating space  
stations  
[NASA-CASE-MFS-20855-1] c 15 N77-10112
- Space station architecture, module, berthing hub, shell  
assembly, berthing mechanism and utility connection  
channel  
[NASA-CASE-ARC-11505-1] c 18 N84-22612
- Shuttle-launch triangular space station  
[NASA-CASE-MSC-20676-1] c 18 N86-24729
- Vapor fragrancier  
[NASA-CASE-LAR-13680-1] c 35 N87-25561
- Locking hinge  
[NASA-CASE-MSC-21056-1] c 18 N88-23827
- Expandable pallet for space station interface  
attachments  
[NASA-CASE-MSC-21117-1] c 18 N88-28958
- Collet lock joint for space station truss  
[NASA-CASE-MSC-21207-1] c 37 N88-29180
- Space station erectable manipulator placement  
system  
[NASA-CASE-MSC-21096-1] c 18 N89-12621
- Quick-disconnect inflatable seal assembly  
[NASA-CASE-KSC-11368-1] c 37 N89-13786
- Space station architecture, module, berthing hub, shell  
assembly, berthing mechanism and utility connection  
channel  
[NASA-CASE-ARC-11505-2] c 18 N89-25266
- Docking system for spacecraft  
[NASA-CASE-MSC-21327-1] c 18 N90-11798
- Docking mechanism for spacecraft  
[NASA-CASE-MSC-21386-1] c 18 N90-20126
- Rotating-unbalanced-mass devices and methods for  
scanning balloon-borne-experiments, free-flying  
spacecraft, and space shuttle/space station attached  
experiments  
[NASA-CASE-MFS-28425-1] c 35 N90-26304

## SPACE STORAGE

- Hemispherical latching apparatus  
[NASA-CASE-MFS-25837-1] c 18 N85-29991

## SPACE SUITS

- Universal pilot restraint suit and body support therefor  
Patent  
[NASA-CASE-XAC-00405] c 05 N70-41819
- Space suit pressure stabilizer Patent  
[NASA-CASE-XLA-05332] c 05 N71-11184
- Equipotential space suit Patent  
[NASA-CASE-LAR-10007-1] c 05 N71-11185
- Biological isolation garment Patent  
[NASA-CASE-MSC-12206-1] c 05 N71-17599
- Space environmental work simulator  
[NASA-CASE-XMF-07488] c 11 N71-18773
- Space suit heat exchanger Patent  
[NASA-CASE-XMS-09571] c 05 N71-19439
- G conditioning suit Patent  
[NASA-CASE-XLA-02898] c 05 N71-20268
- Hard space suit Patent  
[NASA-CASE-XAC-07043] c 05 N71-23161
- Evacuation port seal Patent  
[NASA-CASE-MSC-03290] c 15 N71-23256
- Fabric for micrometeoroid protection garment Patent  
[NASA-CASE-MSC-12109] c 18 N71-26285

- Venting device for pressurized space suit helmet  
Patent  
[NASA-CASE-XMS-09652-1] c 05 N71-26333
- Automatic control of liquid cooling garment by cutaneous  
and external auditory meatus temperatures  
[NASA-CASE-MSC-13917-1] c 05 N72-15098
- Underwater space suit pressure control regulator  
[NASA-CASE-MFS-20332] c 05 N72-20097
- Space suit having improved waist and torso  
movement  
[NASA-CASE-ARC-10275-1] c 05 N72-22092
- Underwater space suit pressure control regulator  
[NASA-CASE-MFS-20332-2] c 05 N73-25125
- Temperature controller for a fluid cooled garment  
[NASA-CASE-ARC-10599-1] c 05 N73-26071
- Space suit  
[NASA-CASE-MSC-12609-1] c 05 N73-32012
- Non-flammable elastomeric fiber from a fluorinated  
elastomer and containing an halogenated flame  
retardant  
[NASA-CASE-MSC-14331-1] c 27 N76-24405
- Protective garment ventilation system  
[NASA-CASE-XMS-04928] c 54 N78-17679
- Emergency space-suit helmet  
[NASA-CASE-MSC-10954-1] c 54 N78-18761
- Spacesuit mobility joints  
[NASA-CASE-ARC-11058-1] c 54 N78-31735
- Spacesuit torso closure  
[NASA-CASE-ARC-11100-1] c 54 N78-31736
- Cooling system for removing metabolic heat from an  
hermetically sealed spacesuit  
[NASA-CASE-ARC-11059-1] c 54 N78-32721
- Spacesuit mobility knee joints  
[NASA-CASE-ARC-11058-2] c 54 N78-24651
- Absorbent product to absorb fluids — for collection of  
human wastes  
[NASA-CASE-MSC-18223-1] c 24 N82-29362
- Torso sizing ring construction for hard space suit  
[NASA-CASE-ARC-11616-1] c 54 N86-28618
- Elbow and knee joint for hard space suits  
[NASA-CASE-ARC-11610-1] c 54 N86-28619
- Shoulder and hip joint for hard space suits  
[NASA-CASE-ARC-11543-1] c 54 N86-28620
- Shoulder and hip joints for hard space suits and the  
like  
[NASA-CASE-ARC-11534-1] c 54 N86-29507
- Weightlessness simulation system and process  
[NASA-CASE-ARC-11646-1] c 14 N87-25344
- Tapered, tubular polyester fabric  
[NASA-CASE-MSC-21082-1] c 27 N87-29672
- Hazards protection for space suits and spacecraft  
[NASA-CASE-MSC-21366-1] c 54 N89-12206
- Don/doff support stand for use with rear entry space  
suits  
[NASA-CASE-MSC-21364-1] c 54 N89-13889
- Suitport extra-vehicular access facility  
[NASA-CASE-ARC-11635-1] c 18 N90-16860
- Hazards protection for space suits and spacecraft  
[NASA-CASE-MSC-21366-1] c 54 N90-25498

## SPACE TOOLS

- Pneumatic inflatable end effector  
[NASA-CASE-MFS-23696-1] c 54 N81-26718

## SPACE TRANSPORTATION SYSTEM

- Coupling device for moving vehicles  
[NASA-CASE-GSC-12322-1] c 37 N80-14398
- Three stage rocket vehicle with parallel staging  
[NASA-CASE-MFS-25878-1] c 18 N84-27787

## SPACE VEHICLE CHECKOUT PROGRAM

- Hydraulic support for dynamic testing Patent  
[NASA-CASE-XMF-03248] c 11 N71-10604
- Electronic checkout system for space vehicles Patent  
[NASA-CASE-XKS-08012-2] c 31 N71-15566
- High pressure gas filter system Patent  
[NASA-CASE-MFS-12806] c 14 N71-17588

## SPACEBORNE EXPERIMENTS

- Space ultra-vacuum facility and method of operation  
[NASA-CASE-MFS-28139-1] c 29 N87-18679

## SPACEBORNE TELESCOPES

- Anastigmatic three-mirror telescope  
[NASA-CASE-MFS-23675-1] c 89 N79-10969
- Cooled echelle grating spectrometer — for space  
telescope applications  
[NASA-CASE-NPO-14372-1] c 35 N80-26635
- Extended range X-ray telescope  
[NASA-CASE-MFS-25282-1] c 34 N83-19015
- Dual aperture multispectral Schmidt objective  
[NASA-CASE-GSC-12756-1] c 74 N84-23248
- Spectral slicing X-ray telescope with variable  
magnification  
[NASA-CASE-MFS-25942-1] c 74 N86-20124
- Self indexing latch system  
[NASA-CASE-MFS-25956-1] c 37 N87-21333

## SPACECRAFT

- Interconnection of solar cells Patent  
[NASA-CASE-XGS-01475] c 03 N71-11058



- Attitude sensor for space vehicles Patent  
[NASA-CASE-XLA-00793] c 21 N71-22880
- Solar cell and circuit array and process for nullifying magnetic fields Patent  
[NASA-CASE-XGS-03390] c 03 N71-23187
- High efficiency ionizer assembly Patent  
[NASA-CASE-XNP-01854] c 28 N71-28850
- Altitude simulation chamber for rocket engine testing  
[NASA-CASE-MFS-20620] c 11 N72-27262
- Space probe/satellite ejection apparatus for spacecraft  
[NASA-CASE-MFS-15429-1] c 18 N84-22609
- SPACECRAFT ANTENNAS**
- Parasitic probe antenna Patent  
[NASA-CASE-XKS-09348] c 09 N71-13521
- Millimeter wave antenna system Patent Application  
[NASA-CASE-GSC-10949-1] c 07 N72-28965
- Integrated thermoelectric generator/space antenna combination  
[NASA-CASE-XER-09521] c 09 N72-12138
- Omnidirectional slot antenna for mounting on cylindrical space vehicle  
[NASA-CASE-LAR-10163-1] c 09 N72-25247
- Singly-curved reflector for use in high-gain antennas  
[NASA-CASE-NPO-11361] c 07 N72-32169
- Collapsible structure for an antenna reflector  
[NASA-CASE-NPO-11751] c 07 N73-24176
- Multi-channel rotating optical interface for data transmission  
[NASA-CASE-NPO-14066-1] c 74 N79-34011
- Antenna deployment mechanism for use with a spacecraft — extensible and retractable telescopic antenna mast  
[NASA-CASE-GSC-12331-1] c 18 N80-14183
- Spiral slotted phased antenna array  
[NASA-CASE-MSC-18532-1] c 32 N82-27558
- SPACECRAFT CABIN ATMOSPHERES**
- Thermal control wall panel Patent  
[NASA-CASE-XLA-01243] c 33 N71-22792
- Nonflammable coating compositions — for use in high oxygen environments  
[NASA-CASE-MFS-20486-2] c 27 N74-17283
- Regenerable device for scrubbing breathable air of CO<sub>2</sub> and moisture without special heat exchanger equipment  
[NASA-CASE-MSC-14771-1] c 54 N77-32722
- SPACECRAFT CABINS**
- Suitport extra-vehicular access facility  
[NASA-CASE-ARC-11635-1] c 18 N90-16860
- SPACECRAFT COMMUNICATION**
- Time division multiplex system  
[NASA-CASE-XGS-05918] c 07 N69-39974
- Phase-shift data transmission system having a pseudo-noise SYNC code modulated with the data in a single channel Patent  
[NASA-CASE-XNP-00911] c 08 N70-41961
- Tracking receiver Patent  
[NASA-CASE-XGS-08679] c 10 N71-21473
- Omnidirectional microwave spacecraft antenna Patent  
[NASA-CASE-XLA-03114] c 09 N71-22888
- VHF/UHF parasitic probe antenna Patent  
[NASA-CASE-XKS-09340] c 07 N71-24814
- Rapid sync acquisition system Patent  
[NASA-CASE-NPO-10214] c 10 N71-26577
- Turnstile slot antenna  
[NASA-CASE-GSC-11428-1] c 32 N74-20864
- Switchable beamwidth monopulse method and system  
[NASA-CASE-GSC-11924-1] c 33 N76-27472
- Antenna feed system for receiving circular polarization and transmitting linear polarization  
[NASA-CASE-NPO-14362-1] c 32 N80-16261
- Common data buffer system — communication with computational equipment utilized in spacecraft operations  
[NASA-CASE-KSC-11048-1] c 62 N81-24779
- Apparatus and method for determining the position of a radiant energy source  
[NASA-CASE-GSC-12147-1] c 32 N81-27341
- Measurement apparatus and procedure for the determination of surface emissivities  
[NASA-CASE-LAR-13455-1] c 32 N87-21206
- Reed-Solomon decoder  
[NASA-CASE-NPO-15982-1] c 60 N87-21591
- SPACECRAFT COMPONENTS**
- Electrical connector Patent Application  
[NASA-CASE-MFS-14741] c 09 N70-20737
- Vibration damping system Patent  
[NASA-CASE-XMS-01620] c 23 N71-15673
- Intermittent type silica gel adsorption refrigerator Patent  
[NASA-CASE-XNP-00920] c 15 N71-15906
- Omnidirectional anisotropic molecular trap Patent  
[NASA-CASE-XGS-00783] c 30 N71-17788
- Spacecraft airlock Patent  
[NASA-CASE-XLA-02050] c 31 N71-22968
- Docking structure for spacecraft Patent  
[NASA-CASE-XMF-05941] c 31 N71-23912
- Redundant actuating mechanism Patent  
[NASA-CASE-XGS-08718] c 15 N71-24600
- Space simulator Patent  
[NASA-CASE-NPO-10141] c 11 N71-24964
- Spacecraft Patent  
[NASA-CASE-MSC-13047-1] c 31 N71-25434
- Peak acceleration limiter for vibrational tester Patent  
[NASA-CASE-NPO-10556] c 14 N71-27185
- Solid state thermal control polymer coating Patent  
[NASA-CASE-XLA-01745] c 33 N71-28903
- Scientific experiment flexible mount  
[NASA-CASE-MSC-12372-1] c 31 N72-25842
- Airlock  
[NASA-CASE-MFS-20922-1] c 18 N74-22136
- Thrust-isolating mounting — characteristics of support for loads mounted in spacecraft  
[NASA-CASE-MFS-21680-1] c 18 N74-27397
- Variable ratio mixed-mode bilateral master-slave control system for shuttle remote manipulator system  
[NASA-CASE-MSC-14245-1] c 18 N75-27041
- High temperature penetrator assembly with bayonet plug and ramp-activated lock  
[NASA-CASE-MSC-18526-1] c 37 N82-24494
- Apparatus for releasably connecting first and second objects in predetermined space relationship  
[NASA-CASE-MSC-18969-1] c 18 N84-22605
- Aerospace vehicle  
[NASA-CASE-LAR-13155-1] c 05 N86-19310
- Spacecraft component heater control system  
[NASA-CASE-MFS-26327-1] c 18 N89-28556
- Docking system for spacecraft  
[NASA-CASE-MSC-21327-1] c 18 N90-11798
- SPACECRAFT CONFIGURATIONS**
- Inflatable honeycomb Patent  
[NASA-CASE-XLA-00204] c 32 N70-36536
- Space and atmospheric reentry vehicle Patent  
[NASA-CASE-XGS-00260] c 31 N70-37924
- Spacecraft separation system for spinning vehicles and/or payloads Patent  
[NASA-CASE-XLA-02132] c 31 N71-10582
- Space shuttle vehicle and system  
[NASA-CASE-MSC-12433] c 31 N73-14854
- Space vehicle  
[NASA-CASE-MFS-22734-1] c 18 N75-19329
- Space station architecture, module, berthing hub, shell assembly, berthing mechanism and utility connection channel  
[NASA-CASE-ARC-11505-1] c 18 N84-22612
- Space Shuttle with rail system and aft thrust structure securing solid rocket boosters to external tank  
[NASA-CASE-MFS-25853-1] c 16 N84-27784
- SPACECRAFT CONSTRUCTION MATERIALS**
- Pressurized cell micrometeoroid detector Patent  
[NASA-CASE-XLA-00936] c 14 N71-14996
- Fluid impervious barrier including liquid metal alloy and method of making same Patent  
[NASA-CASE-XNP-08881] c 17 N71-28747
- Method of making a composite sandwich lattice structure  
[NASA-CASE-LAR-11896-2] c 24 N78-17149
- Fixture for environmental exposure of structural materials under compression load  
[NASA-CASE-LAR-12602-1] c 39 N83-32081
- Oxidation protection coatings for polymers  
[NASA-CASE-LEW-14072-3] c 27 N87-23736
- Aluminum alloy  
[NASA-CASE-LAR-13924-1-CU] c 26 N89-28621
- SPACECRAFT CONTROL**
- Light sensitive digital aspect sensor Patent  
[NASA-CASE-XGS-00359] c 14 N70-34158
- Space vehicle attitude control Patent  
[NASA-CASE-XNP-00465] c 21 N70-35395
- Parachute glider Patent  
[NASA-CASE-XLA-00898] c 02 N70-36804
- Attitude control for spacecraft Patent  
[NASA-CASE-XNP-00294] c 21 N70-36938
- Attitude orientation of spin-stabilized space vehicles Patent  
[NASA-CASE-XLA-00281] c 21 N70-36943
- Hypersonic reentry vehicle Patent  
[NASA-CASE-XMS-04142] c 31 N70-41631
- Roll attitude star sensor system Patent  
[NASA-CASE-XNP-01307] c 21 N70-41856
- Canopus detector including automotive gain control of photomultiplier tube Patent  
[NASA-CASE-XNP-03914] c 21 N71-10771
- Spacecraft experiment pointing and attitude control system Patent  
[NASA-CASE-XLA-05464] c 21 N71-14132
- Attitude control system Patent  
[NASA-CASE-XGS-04393] c 21 N71-14159
- Reactance control system Patent  
[NASA-CASE-XMF-01598] c 21 N71-15583
- Spacecraft attitude detection system by stellar reference Patent  
[NASA-CASE-XGS-03431] c 21 N71-15642
- Inertial reference apparatus Patent  
[NASA-CASE-XAC-03107] c 23 N71-16098
- Construction and method of arranging a plurality of ion engines to form a cluster Patent  
[NASA-CASE-XNP-02923] c 28 N71-23081
- Ion beam deflector Patent  
[NASA-CASE-LEW-10689-1] c 28 N71-26173
- Heated porous plug microthruster  
[NASA-CASE-GSC-10840-1] c 28 N72-18766
- Flight control system  
[NASA-CASE-MSC-13397-1] c 21 N72-25595
- All sky pointing attitude control system  
[NASA-CASE-ARC-10716-1] c 35 N77-20399
- Propulsion apparatus and method using boil-off gas from a cryogenic liquid  
[NASA-CASE-MFS-25946-1] c 20 N86-26368
- Three axis attitude control system  
[NASA-CASE-GSC-12970-1] c 08 N88-23808
- SPACECRAFT DESIGN**
- Lunar landing flight research vehicle Patent  
[NASA-CASE-XFR-00929] c 31 N70-34966
- Space capsule Patent  
[NASA-CASE-XLA-01332] c 31 N71-15664
- Spacecraft radiator cover Patent  
[NASA-CASE-MSC-12049] c 31 N71-16080
- Method and apparatus for securing to a spacecraft Patent  
[NASA-CASE-MFS-11133] c 31 N71-16222
- Aerodynamic protection for space flight vehicles Patent  
[NASA-CASE-XNP-02507] c 31 N71-17679
- Self supporting space vehicle Patent  
[NASA-CASE-XLA-00117] c 31 N71-17680
- Multi-mission module Patent  
[NASA-CASE-XMF-01543] c 31 N71-17730
- Docking structure for spacecraft Patent  
[NASA-CASE-XMF-05941] c 31 N71-23912
- Spacecraft Patent  
[NASA-CASE-MSC-13047-1] c 31 N71-25434
- Emergency earth orbital escape device  
[NASA-CASE-MSC-13281] c 31 N72-18859
- Space vehicle  
[NASA-CASE-MFS-22734-1] c 18 N75-19329
- Space vehicle system  
[NASA-CASE-MSC-12561-1] c 18 N76-17185
- Method and apparatus for neutralizing potentials induced on spacecraft surfaces  
[NASA-CASE-GSC-11963-1] c 33 N77-10429
- Space station architecture, module, berthing hub, shell assembly, berthing mechanism and utility connection channel  
[NASA-CASE-ARC-11505-1] c 18 N84-22612
- Aerospace vehicle  
[NASA-CASE-LAR-13155-1] c 05 N86-19310
- A two-stage earth-to-orbit transport with translating oblique wings for booster recovery  
[NASA-CASE-LAR-14156-1] c 16 N90-16781
- Fluid-loop reaction system  
[NASA-CASE-NPO-17204-1-CU] c 34 N90-26292
- SPACECRAFT DOCKING**
- Expanding center probe and drogue Patent  
[NASA-CASE-XMS-03613] c 31 N71-16346
- Docking structure for spacecraft Patent  
[NASA-CASE-XMF-05941] c 31 N71-23912
- Latching mechanism Patent  
[NASA-CASE-MSC-15474-1] c 15 N71-26162
- Docking structure for spacecraft  
[NASA-CASE-MFS-20863] c 31 N73-26876
- Latch mechanism  
[NASA-CASE-MSC-12549-1] c 37 N74-27903
- Spacecraft docking and alignment system — using television camera system  
[NASA-CASE-MSC-12559-1] c 18 N76-14186
- Multiple in-line docking capability for rotating space stations  
[NASA-CASE-MFS-20855-1] c 15 N77-10112
- Combined docking and grasping device  
[NASA-CASE-MFS-23088-1] c 37 N77-23483
- Terminal guidance sensor system — space shuttle coupling to orbiting satellites  
[NASA-CASE-NPO-14521-1] c 37 N81-27519
- Satellite retrieval system  
[NASA-CASE-MFS-25403-1] c 18 N83-29303
- Apparatus for releasably connecting first and second objects in predetermined space relationship  
[NASA-CASE-MSC-18969-1] c 18 N84-22605
- Space station architecture, module, berthing hub, shell assembly, berthing mechanism and utility connection channel  
[NASA-CASE-ARC-11505-1] c 18 N84-22612
- Rotatable electric cable connecting system  
[NASA-CASE-GSC-12899-1] c 33 N86-20669
- Preloadable vector sensitive latch  
[NASA-CASE-MSC-20910-1] c 37 N87-25582
- Range and range rate system  
[NASA-CASE-MSC-20867-1] c 36 N88-24958

- Smart tunnel: Docking mechanism  
[NASA-CASE-MSC-21360-1] c 18 N89-25263  
Space station architecture, module, berthing hub, shell assembly, berthing mechanism and utility connection channel  
[NASA-CASE-ARC-11505-2] c 18 N89-25266  
Space module assembly apparatus with docking alignment flexibility and restraint  
[NASA-CASE-MSC-21211-1] c 18 N89-28553  
Docking system for spacecraft  
[NASA-CASE-MSC-21327-1] c 18 N90-11798  
Docking mechanism for spacecraft  
[NASA-CASE-MSC-21386-1] c 18 N90-20126  
Closed-loop autonomous docking system  
[NASA-CASE-MFS-28421-1] c 18 N90-26861
- SPACECRAFT ELECTRONIC EQUIPMENT**  
Dynamic Doppler simulator Patent  
[NASA-CASE-XMS-05454-1] c 07 N71-12391  
Vacuum deposition apparatus Patent  
[NASA-CASE-XMF-01667] c 15 N71-17647  
Nose cone mounted heat resistant antenna Patent  
[NASA-CASE-XMS-04312] c 07 N71-22984  
Electrical self-aligning connector — orbital service vehicles  
[NASA-CASE-MFS-25211-2] c 33 N84-14423  
Space station architecture, module, berthing hub, shell assembly, berthing mechanism and utility connection channel  
[NASA-CASE-ARC-11505-1] c 18 N84-22612
- SPACECRAFT ENVIRONMENTS**  
Portable environmental control system Patent  
[NASA-CASE-XMS-09632-1] c 05 N71-11203  
Quick disconnect latch and handle combination Patent  
[NASA-CASE-MFS-11132] c 15 N71-17649  
Dual solid cryogenics for spacecraft refrigeration Patent  
[NASA-CASE-GSC-10188-1] c 23 N71-24725  
Dual stage check valve  
[NASA-CASE-MSC-13587-1] c 15 N73-30459  
Metering gun for dispensing precisely measured charges of fluid  
[NASA-CASE-MFS-21183-1] c 54 N74-17853  
Automatic thermal switch — spacecraft applications  
[NASA-CASE-GSC-12553-1] c 34 N83-28356
- SPACECRAFT EQUIPMENT**  
Four-terminal electrical testing device — initiator bridgewire resistance  
[NASA-CASE-MSC-21166-1] c 35 N87-25555  
Range and range rate system  
[NASA-CASE-MSC-20867-1] c 36 N88-24958  
Capillary heat transport and fluid management device  
[NASA-CASE-MFS-28217-1] c 34 N89-14392  
Surface tension confined liquid cryogen cooler  
[NASA-CASE-GSC-13112-1] c 31 N89-29578  
Acoustic convective system  
[NASA-CASE-NPO-17278-1-CU] c 31 N90-21215
- SPACECRAFT GUIDANCE**  
Ejection unit Patent  
[NASA-CASE-XNP-00676] c 15 N70-38996  
Trigonometric vehicle guidance assembly which aligns the three perpendicular axes of two three-axes systems Patent  
[NASA-CASE-XMF-00684] c 21 N71-21688  
Solar vane actuator Patent  
[NASA-CASE-XNP-05535] c 14 N71-23040  
Azimuth laying system Patent  
[NASA-CASE-XMF-01669] c 21 N71-23289  
Hermetic sealed vibration damper Patent  
[NASA-CASE-MSC-10959] c 15 N71-26243  
Echo tracker/range finder for radars and sonars  
[NASA-CASE-NPO-14361-1] c 32 N82-23376
- SPACECRAFT INSTRUMENTS**  
Mechanical coordinate converter Patent  
[NASA-CASE-XNP-00614] c 14 N70-36907  
Air bearing Patent  
[NASA-CASE-XMF-00339] c 15 N70-38986  
Folding boom assembly Patent  
[NASA-CASE-XGS-00938] c 32 N70-41387  
Pressurized cell micrometeoroid detector Patent  
[NASA-CASE-XLA-00936] c 14 N71-14996  
Guidance and maneuver analyzer Patent  
[NASA-CASE-XNP-09572] c 14 N71-15621  
Clamping assembly for inertial components Patent  
[NASA-CASE-XMS-02184] c 15 N71-20813  
Optical projector system Patent  
[NASA-CASE-XNP-03853] c 23 N71-21882  
Combined optical attitude and attitude indicating instrument Patent  
[NASA-CASE-XLA-01907] c 14 N71-23268  
Method and apparatus for mapping planets  
[NASA-CASE-NPO-11001] c 07 N72-21118  
Spacecraft attitude control method and apparatus  
[NASA-CASE-HQN-10439] c 21 N72-21624  
Pump for delivering heated fluids  
[NASA-CASE-NPO-11417] c 15 N73-24513
- Deployable pressurized cell structure for a micrometeoroid detector  
[NASA-CASE-LAR-10295-1] c 35 N74-21062  
Distributed-switch Dicke radiometers  
[NASA-CASE-GSC-12219-1] c 35 N80-18359  
Real-time multiple-look synthetic aperture radar processor for spacecraft applications  
[NASA-CASE-NPO-14054-1] c 32 N82-12297  
Stirling cycle cryogenic cooler  
[US-PATENT-4,389,849] c 44 N83-28574  
Vibration isolation and pressure compensation apparatus for sensitive instrumentation  
[NASA-CASE-LAR-12728-1] c 35 N83-32026  
Optical system  
[NASA-CASE-NPO-15801-1] c 74 N85-23396  
Fully redundant mechanical release actuator  
[NASA-CASE-LAR-13188-1] c 37 N87-23983
- SPACECRAFT LANDING**  
Non-reusable kinetic energy absorber Patent  
[NASA-CASE-XLE-00810] c 15 N70-34861  
Foam generator Patent  
[NASA-CASE-XLA-00638] c 03 N70-36778  
Discrete local altitude sensing device Patent  
[NASA-CASE-XMS-03792] c 14 N70-41812
- SPACECRAFT LAUNCHING**  
Passive caging mechanism Patent  
[NASA-CASE-GSC-10306-1] c 15 N71-24694  
Disconnect unit  
[NASA-CASE-NPO-11330] c 33 N73-26958
- SPACECRAFT MODELS**  
Apparatus for measuring electric field strength on the surface of a model vehicle Patent  
[NASA-CASE-XLE-02038] c 09 N71-16086
- SPACECRAFT MODULES**  
Radial module space station Patent  
[NASA-CASE-XMS-01906] c 31 N70-41373  
Multi-mission module Patent  
[NASA-CASE-XMF-01543] c 31 N71-17730  
Spacecraft Patent  
[NASA-CASE-MSC-13047-1] c 31 N71-25434  
Thermal control system for a spacecraft modular housing  
[NASA-CASE-GSC-11018-1] c 31 N73-30829
- SPACECRAFT MOTION**  
Magnetic suspension and pointing system — on a carrier vehicle  
[NASA-CASE-LAR-11889-1] c 35 N79-26372
- SPACECRAFT POSITION INDICATORS**  
Device for determining relative angular position between a spacecraft and a radiation emitting celestial body  
[NASA-CASE-GSC-11444-1] c 14 N73-28490  
Spacecraft attitude sensor  
[NASA-CASE-GSC-10890-1] c 21 N73-30640
- SPACECRAFT POWER SUPPLIES**  
Spacecraft battery seals  
[NASA-CASE-XGS-03864] c 15 N69-24320  
Space vehicle electrical system Patent  
[NASA-CASE-XMF-00517] c 03 N70-34157  
Ionospheric battery Patent  
[NASA-CASE-XGS-01593] c 03 N70-35408  
Generator for a space power system Patent  
[NASA-CASE-XLE-04250] c 09 N71-20446  
Monostable multivibrator  
[NASA-CASE-GSC-10082-1] c 10 N72-20221  
Stacked solar cell arrays  
[NASA-CASE-NPO-11771] c 03 N73-20040  
Thermoelectric power system — for spacecraft  
[NASA-CASE-MFS-22002-1] c 44 N76-16612  
Solar energy power system  
[NASA-CASE-MFS-21628-2] c 44 N76-23675  
Module failure isolation circuit for paralleled inverters — preventing system failure during power conditioning for spacecraft applications  
[NASA-CASE-NPO-14000-1] c 33 N79-24254  
Linear magnetic motor/generator — to generate electric energy using magnetic flux for spacecraft power supply  
[NASA-CASE-GSC-12518-1] c 33 N82-24421  
Solar driven liquid metal MHD power generator  
[NASA-CASE-LAR-12495-1] c 44 N83-28573  
Rotatable electric cable connecting system  
[NASA-CASE-GSC-12899-1] c 33 N86-20669  
Liquid hydrogen polygeneration system and process  
[NASA-CASE-KSC-11304-2] c 28 N88-23744  
Bidirectional control system for energy flow in solar powered flywheel  
[NASA-CASE-MFS-25978-1] c 44 N87-21410  
Arcjet power supply and start circuit  
[NASA-CASE-LEW-14374-1] c 09 N88-28939
- SPACECRAFT PROPULSION**  
Colloid propulsion method and apparatus Patent  
[NASA-CASE-XLE-00817] c 28 N70-33265  
Trajectory-correction propulsion system Patent  
[NASA-CASE-XNP-01104] c 28 N70-39931  
Ion engine casing construction and method of making same Patent  
[NASA-CASE-XNP-06842] c 28 N71-23293
- Voice operated controller Patent  
[NASA-CASE-XLA-04063] c 31 N71-33160  
Solid propellant motor  
[NASA-CASE-NPO-11458A] c 20 N78-32179  
General purpose rocket furnace  
[NASA-CASE-MFS-23460-1] c 12 N79-26075  
Speed control device for a heavy duty shaft — solar sails for spacecraft propulsion  
[NASA-CASE-NPO-14170-1] c 37 N81-15384
- SPACECRAFT RADIATORS**  
Thermal control canister  
[NASA-CASE-GSC-12253-1] c 34 N79-31523  
Thermal control system — removing waste heat from industrial process spacecraft  
[NASA-CASE-GSC-12771-1] c 34 N84-14461  
Radiative cooler — spacecraft radiators  
[NASA-CASE-NPO-15465-1] c 34 N84-22903  
Multi-leg heat pipe evaporator  
[NASA-CASE-MSC-20812-1] c 34 N86-27593  
Space vehicle thermal rejection system  
[NASA-CASE-LAR-13738-1] c 18 N87-29586  
Gas particle radiator  
[NASA-CASE-LEW-14297-1] c 35 N89-12048  
Liquid sheet radiator apparatus  
[NASA-CASE-LEW-14295-1] c 31 N89-14348
- SPACECRAFT RECOVERY**  
Assembly for recovering a capsule Patent  
[NASA-CASE-XMF-00641] c 31 N70-36410  
Wing deployment method and apparatus Patent  
[NASA-CASE-XMS-00907] c 02 N70-41630  
Satellite retrieval system  
[NASA-CASE-MFS-25403-1] c 18 N83-29303  
Apparatus and method of capturing an orbiting spacecraft  
[NASA-CASE-MSC-20979-1] c 37 N87-22985
- SPACECRAFT REENTRY**  
Space capsule Patent  
[NASA-CASE-XLA-00149] c 31 N70-37938  
Event recorder Patent  
[NASA-CASE-XLA-01832] c 14 N71-21006  
Ceramic-ceramic shell tile thermal protection system and method thereof  
[NASA-CASE-ARC-11841-1] c 24 N88-18628
- SPACECRAFT SHIELDING**  
Aerodynamic protection for space flight vehicles Patent  
[NASA-CASE-XNP-02507] c 31 N71-17679  
Isothermal cover with thermal reservoirs Patent  
[NASA-CASE-MFS-20355] c 33 N71-25353  
Stabilized zinc oxide coating compositions Patent  
[NASA-CASE-XMF-07770-2] c 18 N71-26772  
Electrically conductive thermal control coatings  
[NASA-CASE-GSC-12207-1] c 24 N79-14156  
Thermal insulation protection means  
[NASA-CASE-MSC-12737-1] c 24 N79-25142  
Thermal barrier pressure seal — shielding junctions between spacecraft control surfaces and structures  
[NASA-CASE-MSC-18134-1] c 37 N81-15363  
High temperature glass thermal control structure and coating — for application to spacecraft reusable heat shielding  
[NASA-CASE-ARC-11184-1] c 44 N83-34448  
Variable anodic thermal control coating  
[NASA-CASE-LAR-12719-1] c 44 N83-34449  
Shell tile thermal protection system  
[NASA-CASE-LAR-12862-1] c 27 N84-27886  
Mechanical fastener  
[NASA-CASE-LAR-12738-2] c 37 N85-30335
- SPACECRAFT STABILITY**  
Reaction wheel scanner Patent  
[NASA-CASE-XGS-02629] c 14 N71-21082  
Attitude sensor  
[NASA-CASE-LAR-10586-1] c 19 N74-15089  
Annular momentum control device used for stabilization of space vehicles and the like  
[NASA-CASE-LAR-11051-1] c 15 N76-14158  
Tetherline system for orbiting satellites  
[NASA-CASE-MFS-23564-1] c 15 N78-25119  
Active nutation controller  
[NASA-CASE-GSC-12273-1] c 35 N80-21719  
Method of damping nutation motion with minimum spin axis attitude disturbance  
[NASA-CASE-GSC-12551-1] c 18 N83-28064
- SPACECRAFT STRUCTURES**  
Collapsible loop antenna for space vehicle Patent  
[NASA-CASE-XMF-00437] c 07 N70-40202  
Electro-optical alignment control system Patent  
[NASA-CASE-XMF-00908] c 14 N70-40238  
Spacecraft radiator cover Patent  
[NASA-CASE-MSC-12049] c 31 N71-16080  
Satellite appendage tie down cord Patent  
[NASA-CASE-XGS-02554] c 31 N71-21064  
Thermal control panel Patent  
[NASA-CASE-XLA-07728] c 33 N71-22890  
Inflatable tether Patent  
[NASA-CASE-XMS-10993] c 15 N71-28936

Delayed simultaneous release mechanism  
[NASA-CASE-GSC-10814-1] c 03 N73-20039

Pressurized panel  
[NASA-CASE-XLA-08916-2] c 14 N73-28487

Structural heat pipe — for spacecraft wall thermal insulation system  
[NASA-CASE-GSC-11619-1] c 34 N75-12222

Auger attachment method for insulation — of spacecraft  
[NASA-CASE-MSC-12615-1] c 37 N76-19437

Particulate and solar radiation stable coating for spacecraft  
[NASA-CASE-LAR-10805-2] c 34 N77-18382

Pneumatic inflatable end effector  
[NASA-CASE-MFS-23896-1] c 54 N81-26718

Curved cap corrugated sheet  
[NASA-CASE-LAR-12884-1] c 18 N84-33450

Elastomer toughened polyimide adhesives — bonding metal and composite material structures for aircraft and spacecraft  
[NASA-CASE-LAR-12775-2] c 27 N85-21349

**SPACECRAFT TELEVISION**  
Electrically-operated rotary shutter Patent  
[NASA-CASE-XNP-00637] c 14 N70-40273

Television signal scan rate conversion system Patent  
[NASA-CASE-XMS-07168] c 07 N71-11300

Optical conversion method — for spacecraft television  
[NASA-CASE-MSC-12616-1] c 74 N78-17865

**SPACECRAFT TEMPERATURE**  
Space vehicle thermal rejection system  
[NASA-CASE-LAR-13738-1] c 18 N87-29586

Capillary heat transport and fluid management device  
[NASA-CASE-MFS-28217-1] c 34 N89-14392

**SPACECRAFT TRACKING**  
Ranging system Patent  
[NASA-CASE-NPO-10066] c 09 N71-18588

Deep space monitor communication satellite system Patent  
[NASA-CASE-XAC-06029-1] c 31 N71-24813

Optical tracking mount Patent  
[NASA-CASE-MFS-14017] c 14 N71-26627

Orbital and entry tracking accessory for globes — to provide range requirements for reentry vehicles to any landing site  
[NASA-CASE-LAR-10626-1] c 19 N74-21015

Conical scan tracking system employing a large antenna  
[NASA-CASE-NPO-14009-1] c 32 N79-13214

Efficient detection and signal parameter estimation with application to high dynamic GPS receiver  
[NASA-CASE-NPO-17820-1-CU] c 04 N90-18379

**SPACECREWS**  
Orbital escape device Patent  
[NASA-CASE-XMS-06162] c 31 N71-28851

**SPACELAB PAYLOADS**  
Hemispherical latching apparatus  
[NASA-CASE-MFS-25837-1] c 18 N85-29991

**SPALLATION**  
Method of producing I-123 — by bombardment of cesium causing spallation  
[NASA-CASE-LEW-11390-2] c 25 N76-27383

**SPARK CHAMBERS**  
Laser measuring system for incremental assemblies — measuring wire-wrapped frame assemblies in spark chambers  
[NASA-CASE-GSC-12321-1] c 38 N82-16396

Inorganic spark chamber frame and method of making the same  
[NASA-CASE-GSC-12354-1] c 35 N82-24471

**SPARK GAPS**  
Protective circuit of the spark gap type  
[NASA-CASE-XAC-08981] c 09 N69-39897

Measurement of time differences between luminous events Patent  
[NASA-CASE-XLA-01987] c 23 N71-23976

**SPARK IGNITION**  
High temperature spark plug Patent  
[NASA-CASE-XLE-00660] c 28 N70-39925

Plasma igniter for internal combustion engine  
[NASA-CASE-NPO-13828-1] c 37 N79-11405

**SPARK PLUGS**  
High temperature spark plug Patent  
[NASA-CASE-XLE-00660] c 28 N70-39925

**SPARKS**  
Electronic precipitator control  
[NASA-CASE-LAR-13273-2] c 33 N90-20320

**SPATIAL DISTRIBUTION**  
Propellant mass distribution metering apparatus Patent  
[NASA-CASE-NPO-10185] c 10 N71-26339

**SPATIAL FILTERING**  
Spatial filter for Q-switched lasers  
[NASA-CASE-LEW-12164-1] c 36 N77-32478

Real-time optical multiple object recognition and tracking system and method  
[NASA-CASE-NPO-17139-1-CU] c 74 N88-25301

**SPATIAL RESOLUTION**

Wide-angle flat field telescope  
[NASA-CASE-GSC-12825-1] c 74 N86-28732

**SPECIMENS**

Low temperature storage container for transporting perishables to space station  
[NASA-CASE-MFS-28248-1] c 31 N88-24817

Method of radiographic inspection of wooden members  
[NASA-CASE-LAR-13724-1] c 38 N90-23756

**SPECKLE PATTERNS**

Method and apparatus for reducing speckle  
[NASA-CASE-LAR-13771-1] c 38 N89-14428

**SPECTRAL BANDS**

Multispectral linear array multiband selection device  
[NASA-CASE-GSC-12911-1] c 74 N86-29650

**SPECTRAL CORRELATION**

Correlation spectrometer having high resolution and multiplexing capability  
[NASA-CASE-NPO-15558-1] c 35 N84-34705

**SPECTRAL REFLECTANCE**

Single reflector interference spectrometer and drive system therefor  
[NASA-CASE-NPO-11932-1] c 35 N74-23040

**SPECTRAL SENSITIVITY**

Method and apparatus for enhancing laser absorption sensitivity  
[NASA-CASE-NPO-16567-1-CU] c 36 N87-28006

**SPECTRAL SIGNATURES**

Multispectral imaging and analysis system — using charge coupled devices and linear arrays  
[NASA-CASE-NPO-13691-1] c 43 N79-17288

**SPECTROMETERS**

Photoelectric energy spectrometer Patent  
[NASA-CASE-XNP-04181] c 14 N71-15599

Variable frequency nuclear magnetic resonance spectrometer Patent  
[NASA-CASE-XNP-08830] c 14 N71-26266

Maksutov spectrograph Patent  
[NASA-CASE-XLA-10402] c 14 N71-29041

Dual purpose optical instrument capable of simultaneously acting as spectrometer and diffractometer  
[NASA-CASE-XNP-05231] c 14 N73-28491

Compton scatter attenuation gamma ray spectrometer  
[NASA-CASE-MFS-21441-1] c 14 N73-30392

Mossbauer spectrometer radiation detector  
[NASA-CASE-LAR-11155-1] c 35 N74-15091

Single reflector interference spectrometer and drive system therefor  
[NASA-CASE-NPO-11932-1] c 35 N74-23040

Spectrometer integrated with a facsimile camera  
[NASA-CASE-LAR-11207-1] c 35 N75-19613

Resonant waveguide stark cell — using microwave spectrometers  
[NASA-CASE-LAR-11352-1] c 33 N75-26245

Ion and electron detector for use in an ICR spectrometer  
[NASA-CASE-NPO-13479-1] c 35 N77-10492

Frequency-scanning particle size spectrometer  
[NASA-CASE-NPO-13806-2] c 35 N80-18364

Velocity servo for continuous scan Fourier interference spectrometer  
[NASA-CASE-NPO-14093-1] c 35 N80-20563

Visible and infrared polarization ratio spectrophotometer  
[NASA-CASE-LAR-12285-1] c 35 N80-28687

Portable reflectance spectrometer  
[NASA-CASE-NPO-13556-1] c 35 N84-33766

Correlation spectrometer having high resolution and multiplexing capability  
[NASA-CASE-NPO-15558-1] c 35 N84-34705

FET charge sensor and voltage probe  
[NASA-CASE-NPO-16045-1] c 76 N87-13313

Method of fabricating an imaging X-ray spectrometer  
[NASA-CASE-GSC-12956-1] c 35 N87-14671

A compact fast wide angle broad band spectrometer optical system  
[NASA-CASE-NPO-17562-1-CU] c 74 N89-24153

**SPECTROPHOTOMETERS**  
Apparatus for producing three-dimensional recordings of fluorescence spectra Patent  
[NASA-CASE-XGS-01231] c 14 N70-41676

High resolution Fourier interferometer-spectrophotopolarimeter  
[NASA-CASE-NPO-13604-1] c 35 N76-31490

Differential photoacoustic absorption detector  
[NASA-CASE-NPO-13759-1] c 74 N78-17867

**SPECTRORADIOMETERS**  
Compact spectroradiometer  
[NASA-CASE-HQN-10693] c 14 N71-34389

**SPECTROSCOPIC ANALYSIS**  
Spectroscopy equipment using a slender cylindrical reflector as a substitute for a slit Patent  
[NASA-CASE-XGS-08269] c 23 N71-26206

Method and apparatus for determining optical absorption and emission characteristics of a crystal or non-crystalline fiber  
[NASA-CASE-LAR-13963-1] c 76 N90-24150

**SPECTROSCOPIC TELESCOPES**

Variable magnification variable dispersion glancing incidence imaging x ray spectroscopic telescope  
[NASA-CASE-MFS-28013-3] c 89 N90-27594

**SPECTRUM ANALYSIS**

Photoelectric energy spectrometer Patent  
[NASA-CASE-XNP-04181] c 14 N71-15599

Spectral method for monitoring atmospheric contamination of inert-gas welding shields Patent  
[NASA-CASE-XMF-02039] c 15 N71-15871

Method and apparatus for high resolution spectral analysis  
[NASA-CASE-NPO-10748] c 08 N72-20177

Stark cell photoacoustic detection of constituent gases in sample  
[NASA-CASE-NPO-14143-1] c 25 N81-14015

Method and circuit for controlling the evolution time interval of a laser output pulse  
[NASA-CASE-LAR-13772-1] c 36 N89-28816

**SPECTRAL REFLECTION**

Real time reflectometer — measurement of specular reflectance  
[NASA-CASE-MFS-23118-1] c 35 N77-31465

**SPEECH BASEBAND COMPRESSION**

Method and apparatus for telemetry adaptive bandwidth compression  
[NASA-CASE-MSC-20821-1] c 17 N87-25348

**SPEECH RECOGNITION**

Speech analyzer  
[NASA-CASE-GSC-11898-1] c 32 N77-30309

**SPEED CONTROL**

System for maintaining a motor at a predetermined speed utilizing digital feedback means Patent  
[NASA-CASE-XMF-06892] c 09 N71-24805

Optimal control system for an electric motor driven vehicle  
[NASA-CASE-NPO-11210] c 11 N72-20244

Two speed drive system — mechanical device for changing speed on rotating vehicle wheel  
[NASA-CASE-MFS-20645-1] c 37 N74-23070

Low speed phaselock speed control system — for brushless dc motor  
[NASA-CASE-GSC-11127-1] c 09 N75-24758

Speed control device for a heavy duty shaft — solar sails for spacecraft propulsion  
[NASA-CASE-NPO-14170-1] c 37 N81-15364

Variable speed drive  
[NASA-CASE-GSC-12643-1] c 37 N83-26078

**SPEED INDICATORS**

Miniature electrooptical air flow sensor  
[NASA-CASE-LAR-13065-1] c 35 N85-20295

**SPEED REGULATORS**

A dc motor speed control system Patent  
[NASA-CASE-MFS-14610] c 09 N71-28886

**SPHERES**

Guidance and maneuver analyzer Patent  
[NASA-CASE-XNP-09572] c 14 N71-15621

Radar calibration sphere  
[NASA-CASE-XLA-11154] c 07 N72-21117

Method of forming frozen spheres in a force-free drop tower  
[NASA-CASE-NPO-14845-1] c 27 N82-28442

Sphere forming method and apparatus  
[NASA-CASE-NPO-15070-1] c 31 N83-35176

Contactless pellet fabrication  
[NASA-CASE-NPO-15592-1] c 71 N84-16940

Process for making a noble metal on tin oxide catalyst  
[NASA-CASE-LAR-13741-1-SB] c 25 N90-20180

**SPHERICAL SHELLS**

Electrode and insulator with shielded dielectric junction  
[NASA-CASE-XLE-03778] c 09 N69-21542

Spherical measurement device  
[NASA-CASE-XLA-06683] c 14 N72-28436

Method and apparatus for growing crystals  
[NASA-CASE-MFS-28137-1] c 76 N88-24544

Multi-element spherical shell generation  
[NASA-CASE-NPO-17203-1-CU] c 34 N90-23700

**SPHERICAL TANKS**

Spherical tank gauge Patent  
[NASA-CASE-XMS-06236] c 14 N71-21007

**SPHERICAL WAVES**

Shock wave convergence apparatus  
[NASA-CASE-MFS-20890] c 14 N72-22439

**SPHYGMOGRAPHY**

Logic-controlled occlusive cuff system  
[NASA-CASE-MSC-14836-1] c 52 N82-11770

**SPIKE NOZZLES**

Aerodynamic spike nozzle Patent  
[NASA-CASE-XGS-01143] c 31 N71-15647

## SPIKE POTENTIALS

Elimination of current spikes in buck power converters  
[NASA-CASE-NPO-14505-1] c 33 N81-19393

## SPILLING

Spillage detector for liquid chromatography systems  
[NASA-CASE-MSC-20206-1] c 25 N86-27431

## SPIN DYNAMICS

Nutation damper  
[NASA-CASE-GSC-11205-1] c 15 N73-25513  
Stabilization of He2(a 3 Sigma u+ molecules in liquid helium by optical pumping for vacuum UV laser 6  
[NASA-CASE-NPO-13993-1] c 72 N79-13826  
Dual towline spin-recovery device  
[NASA-CASE-LAR-13076-1] c 08 N85-35200  
Miniaturization of flight deflection measurement system  
[NASA-CASE-LAR-13629-1] c 35 N90-23707

## SPIN REDUCTION

Optical spin compensator  
[NASA-CASE-XGS-02401] c 14 N69-27485  
Despin weight release Patent  
[NASA-CASE-XLA-00678] c 15 N70-38601  
Stretch de-spin mechanism Patent  
[NASA-CASE-XGS-00619] c 30 N70-40016  
Spacecraft separation system for spinning vehicles and/or payloads Patent  
[NASA-CASE-XLA-02132] c 31 N71-10582  
Method and means for damping nutation in a satellite Patent  
[NASA-CASE-XMF-00442] c 31 N71-10747

## SPIN STABILIZATION

Dynamic precession damper for spin stabilized vehicles Patent  
[NASA-CASE-XLA-01989] c 21 N70-34295  
Attitude orientation of spin-stabilized space vehicles Patent  
[NASA-CASE-XLA-00281] c 21 N70-36943  
Spacecraft attitude detection system by stellar reference Patent  
[NASA-CASE-XGS-03431] c 21 N71-15642  
Cartwheel satellite synchronization system Patent  
[NASA-CASE-XGS-05579] c 31 N71-15676  
Velocity package Patent  
[NASA-CASE-XLA-01339] c 31 N71-15692  
Passive dual spin misalignment compensators --- gyro-stabilized device  
[NASA-CASE-GSC-11479-1] c 35 N74-28097  
Deployable flexible ventral fins for use as an emergency spin recovery device in aircraft  
[NASA-CASE-LAR-10753-1] c 08 N74-30421  
Active nutation controller  
[NASA-CASE-GSC-12273-1] c 35 N80-21719  
Thrust augmented spin recovery device  
[NASA-CASE-LAR-11970-2] c 08 N81-19130  
Scanner --- photography from a spin stabilized synchronous satellite  
[NASA-CASE-GSC-12032-2] c 43 N82-13465

## SPINDLES

Variable contour securing system  
[NASA-CASE-MSC-16270-1] c 37 N78-27423

## SPINE

Spine immobilization apparatus  
[NASA-CASE-ARC-11167-1] c 52 N81-25662

## SPIRAL ANTENNAS

Spiral slotted phased antenna array  
[NASA-CASE-MSC-18532-1] c 32 N82-27558

## SPIRAL WRAPPING

Adjustable tension wire guide Patent  
[NASA-CASE-XMS-02383] c 15 N71-15918  
Continuous self-locking spiral wound seal --- for maintaining pressure between chambers in cryogenic wind tunnels  
[NASA-CASE-LAR-12315-1] c 37 N82-24490  
Modified spiral wound retaining ring  
[NASA-CASE-LAR-12361-1] c 37 N83-19091

## SPIRALS (CONCENTRATORS)

Spiral groove seal --- for hydraulic rotating shaft  
[NASA-CASE-LEW-10326-3] c 37 N74-10474

## SPIROMETERS

Balanced bellows spirometer  
[NASA-CASE-XAR-01547] c 05 N69-21473

## SPLICING

Optimized bolted joint  
[NASA-CASE-LAR-13250-1] c 37 N86-27630

## SPLINTS

Stretcher Patent  
[NASA-CASE-XMF-06589] c 05 N71-23159

## SPOILERS

Hydraulic actuator mechanism to control aircraft spoiler movements through dual input commands  
[NASA-CASE-LAR-12412-1] c 08 N82-24205

## SPORES

Lyophilized spore dispenser  
[NASA-CASE-LAR-10544-1] c 37 N74-13178

## SPOT WELDS

Electric arc welding Patent  
[NASA-CASE-XMF-00392] c 15 N70-34814  
Automatic closed circuit television arc guidance control Patent  
[NASA-CASE-MFS-13048] c 07 N71-19433

## SPRAY CHARACTERISTICS

Constant-output atomizer --- Inhalation therapy and aerosol research  
[NASA-CASE-MFS-25631-1] c 34 N84-12406

## SPRAY NOZZLES

Rocket injector head  
[NASA-CASE-XMF-04592-1] c 20 N79-21125  
Fire extinguishing apparatus having a slidable mass for a penetrator nozzle --- for penetrating aircraft and shuttle orbiter skin  
[NASA-CASE-KSC-11064-1] c 31 N81-14137  
Controlled overspray spray nozzle  
[NASA-CASE-MFS-25139-1] c 34 N82-13376  
Remotely controlled spray gun  
[NASA-CASE-MFS-28110-1] c 37 N87-24689

## SPRAYED COATINGS

Method of making a diffusion bonded refractory coating Patent  
[NASA-CASE-XLE-01604-2] c 15 N71-15610  
Thermal protection ablation spray system Patent  
[NASA-CASE-XLA-04251] c 18 N71-26100  
Peen plating  
[NASA-CASE-GSC-11163-1] c 15 N73-32360  
Sprayable low density ablator and application process  
[NASA-CASE-MFS-23506-1] c 24 N78-24290  
Spray coating apparatus having a rotatable workpiece holder  
[NASA-CASE-ARC-11110-1] c 37 N82-24492  
Thermal barrier coating system having improved adhesion  
[NASA-CASE-LEW-1335901] c 27 N83-31855  
Spray applicator for spraying coatings and other fluids in space  
[NASA-CASE-MSC-18852-1] c 37 N85-29283  
Method of coating a substrate with a rapidly solidified metal  
[NASA-CASE-GSC-12880-1] c 26 N86-32550

## SPRAYERS

External liquid-spray cooling of turbine blades Patent  
[NASA-CASE-XLE-00037] c 28 N70-33372  
Method and apparatus for attaching physiological monitoring electrodes Patent  
[NASA-CASE-XFR-07658-1] c 05 N71-26293  
Liquid spray cooling method Patent  
[NASA-CASE-XLE-00027] c 33 N71-29152  
Closed loop spray cooling apparatus --- for particle accelerator targets  
[NASA-CASE-LEW-11981-1] c 31 N78-17237  
Spray coating apparatus having a rotatable workpiece holder  
[NASA-CASE-ARC-11110-1] c 37 N82-24492  
Spray applicator for spraying coatings and other fluids in space  
[NASA-CASE-MSC-18852-1] c 37 N85-29283  
Liquid seeding atomizer  
[NASA-CASE-ARC-11631-1] c 34 N87-21255  
Remotely controlled spray gun  
[NASA-CASE-MFS-28110-1] c 37 N87-24689  
Warm fog dissipation using large volume water sprays  
[NASA-CASE-MFS-25962-1] c 09 N89-25242

## SPRAYING

Aircraft wheel spray drag alleviator Patent  
[NASA-CASE-XLA-01583] c 02 N70-36825  
Closed loop spray cooling apparatus  
[NASA-CASE-LEW-11981-2] c 34 N79-20336  
Method and apparatus for suppressing ignition overpressure in solid rocket propulsion systems  
[NASA-CASE-MFS-25843-1] c 20 N83-17588

## SPREAD SPECTRUM TRANSMISSION

Navigation system and method  
[NASA-CASE-GSC-12508-1] c 04 N84-22546

## SPREADING

Tool attachment for spreading loose elements away from work Patent  
[NASA-CASE-XMF-02107] c 15 N71-10809

## SPRINGS (ELASTIC)

Belleville spring assembly with elastic guides  
[NASA-CASE-XNP-09452] c 15 N69-27504  
Multiple Belleville spring assembly Patent  
[NASA-CASE-XNP-00840] c 15 N70-38225  
Switching mechanism with energy storage means Patent  
[NASA-CASE-XGS-00473] c 03 N70-38713  
Load cell protection device Patent  
[NASA-CASE-XMS-06782] c 32 N71-15974  
Vibration isolation system using compression springs  
[NASA-CASE-NPO-11012] c 15 N72-11391  
Spring operated accelerator and constant force spring mechanism therefor  
[NASA-CASE-ARC-10898-1] c 35 N77-18417

Natural turbulence electrical power generator --- using wave action or random motion  
[NASA-CASE-LAR-11551-1] c 44 N80-29834  
Resilient seal ring assembly with spring means applying force to wedge member --- cryogenic applications  
[NASA-CASE-MFS-25678-1] c 37 N84-11497  
Unidirectional flexural pivot  
[NASA-CASE-GSC-12822-1] c 37 N84-12492  
Segmented tubular cushion springs and spring assembly  
[NASA-CASE-ARC-11349-1] c 37 N86-20797  
Rotary stepping device with memory metal actuator  
[NASA-CASE-NPO-15482-1] c 37 N87-23970  
Locking hinge  
[NASA-CASE-MSC-21056-1] c 18 N88-23827

## SPUTTERING

A method for the deposition of beta-silicon carbide by isoeptaxy  
[NASA-CASE-ERC-10120] c 26 N69-33482  
Method of forming transparent films of ZnO  
[NASA-CASE-FRC-10019] c 15 N73-12487  
Method and apparatus for sputtering utilizing an apertured electrode and a pulsed substrate bias  
[NASA-CASE-LEW-10920-1] c 17 N73-24569  
Sputtering holes with ion beamlets  
[NASA-CASE-LEW-11646-1] c 20 N74-31269  
Multitarget sequential sputtering apparatus  
[NASA-CASE-NPO-13345-1] c 37 N75-19684  
Method of cold welding using ion beam technology  
[NASA-CASE-LEW-12982-1] c 37 N81-19455  
Refractory coatings and method of producing the same  
[NASA-CASE-LEW-13169-1] c 26 N82-29415  
Ion sputter textured graphite --- anode collector plates in electron tube devices  
[NASA-CASE-LEW-12819-1] c 24 N83-10117  
Mechanical bonding of metal method  
[NASA-CASE-LEW-12941-1] c 26 N83-10170  
Diamondlike flake composites  
[NASA-CASE-LEW-13837-1] c 24 N84-22695  
Method of making an ion beam sputter-etched ventricular catheter for hydrocephalus shunt  
[NASA-CASE-LEW-13107-2] c 52 N84-23095  
Ion sputter textured graphite electrode plates  
[NASA-CASE-LEW-12919-2] c 70 N84-28565  
Diamondlike flakes  
[NASA-CASE-LEW-13837-2] c 24 N85-21267  
Liquid crystal light valve structures  
[NASA-CASE-MSC-20036-1] c 76 N85-33826  
Oxidation protection coatings for polymers  
[NASA-CASE-LEW-14072-1] c 27 N86-19458  
Textured carbon surfaces on copper by sputtering  
[NASA-CASE-LEW-14130-1] c 31 N86-32587  
Ion beam sputter etching  
[NASA-CASE-LEW-13899-1] c 31 N87-21160

## SQUARE WAVES

High speed phase detector Patent  
[NASA-CASE-XNP-01306-2] c 09 N71-24596

## SQUARES (MATHEMATICS)

Apparatus for computing square roots Patent  
[NASA-CASE-XGS-04768] c 08 N71-19437

## SQUEEZE FILMS

Dual clearance squeeze film damper  
[NASA-CASE-LEW-13506-1] c 37 N85-33490

## SQUIBS

Separation nut Patent  
[NASA-CASE-XGS-01971] c 15 N71-15922

## SQUID (DETECTORS)

Planar thin film SQUID with integral flux concentrator  
[NASA-CASE-MFS-28282-1] c 76 N89-29602

## STABILITY

Variable friction secondary seal for face seals  
[NASA-CASE-LEW-14170-1] c 37 N86-25790  
Optical distance measuring instrument  
[NASA-CASE-GSC-12761-1] c 74 N86-32266  
Reflection oscillators employing series resonant crystals  
[NASA-CASE-GSC-13173-1] c 33 N90-23635  
Adjustable choke for fluids nozzle  
[NASA-CASE-NPO-17625-1-CU] c 34 N90-27070  
STABILITY AUGMENTATION  
Velocity vector control system augmented with direct lift control  
[NASA-CASE-LAR-12268-1] c 08 N81-24106  
Leading edge flap system for aircraft control augmentation  
[NASA-CASE-LAR-12787-2] c 08 N85-19985

## STABILITY TESTS

Method and apparatus for checking the stability of a setup for making reflection type holograms  
[NASA-CASE-MFS-21455-1] c 35 N74-15146

## STABILIZATION

Ultrastable calibrated light source  
[NASA-CASE-MSC-12293-1] c 14 N72-27411

- System for stabilizing torque between a balloon and gondola  
[NASA-CASE-GSC-11077-1] c 02 N73-13008
- Suppression of flutter  
[NASA-CASE-LAR-10682-1] c 02 N73-26004
- Radiation hardening of MOS devices by boron — for stabilizing gate threshold potential  
[NASA-CASE-GSC-11425-2] c 76 N75-25730
- Arc control in compact arc lamps  
[NASA-CASE-NPO-10870-1] c 33 N77-22388
- Self-stabilizing radial face seal  
[NASA-CASE-LEW-12991-1] c 37 N81-24442
- Method and apparatus for transfer function simulator for testing complex systems  
[NASA-CASE-NPO-15696-1] c 33 N85-34333
- Stabilization and oscillation of an acoustically levitated object  
[NASA-CASE-NPO-16896-1-CU] c 71 N89-13236
- STABILIZED PLATFORMS**
- Hydraulic drive mechanism Patent  
[NASA-CASE-XMS-03252] c 15 N71-10658
- Failure detection and control means for improved drift performance of a gimbaled platform system  
[NASA-CASE-MFS-23551-1] c 04 N76-26175
- Rotary leveling base platform  
[NASA-CASE-ARC-10981-1] c 37 N78-27425
- Magnetic bearing and motor  
[NASA-CASE-GSC-12726-1] c 37 N83-34323
- STABILIZERS**
- Satellite despin device Patent  
[NASA-CASE-XMF-08523] c 31 N71-20396
- STABILIZERS (AGENTS)**
- Hydrazinium nitroformate propellant stabilized with nitroguanidine  
[NASA-CASE-NPO-12000] c 27 N72-25699
- STABILIZERS (FLUID DYNAMICS)**
- Assembly for recovering a capsule Patent  
[NASA-CASE-XMF-00641] c 31 N70-36410
- Mechanical stability augmentation system Patent  
[NASA-CASE-XLA-06339] c 02 N71-13422
- Apparatus for automatically stabilizing the attitude of a nonrigid vehicle  
[NASA-CASE-ARC-10134] c 30 N72-17873
- Life raft stabilizer  
[NASA-CASE-MSC-12393-1] c 02 N73-26006
- Externally supported internally stabilized flexible duct joint  
[NASA-CASE-MFS-19184-1] c 37 N76-14460
- STABLE OSCILLATIONS**
- Amplifier drift tester  
[NASA-CASE-XMS-05562-1] c 09 N69-39986
- STACKS**
- Remote fire stack igniter — with solenoid-controlled valve  
[NASA-CASE-MFS-21675-1] c 25 N74-33378
- STAGE SEPARATION**
- Tubular coupling having frangible connecting means  
[NASA-CASE-XLA-02854] c 15 N69-27490
- Missile stage separation indicator and stage initiator Patent  
[NASA-CASE-XLA-00791] c 03 N70-39930
- Quick release separation mechanism Patent  
[NASA-CASE-XLA-01441] c 15 N70-41679
- Spacecraft separation system for spinning vehicles and/or payloads Patent  
[NASA-CASE-XLA-02132] c 31 N71-10582
- Payload/burned-out motor case separation system Patent  
[NASA-CASE-XLA-05369] c 31 N71-15687
- Single action separation mechanism Patent  
[NASA-CASE-XLA-00188] c 15 N71-22874
- Lateral displacement system for separated rocket stages Patent  
[NASA-CASE-XLA-04804] c 31 N71-23008
- Separation simulator Patent  
[NASA-CASE-XKS-04631] c 10 N71-23663
- Frangible link  
[NASA-CASE-MSC-11849-1] c 15 N72-22488
- Tanker orbit transfer vehicle and method  
[NASA-CASE-MSC-20543-1] c 18 N84-22610
- STAGNATION PRESSURE**
- Traversing probe Patent  
[NASA-CASE-XFR-02007] c 12 N71-24692
- Stagnation pressure probe — for measuring pressure of supersonic gas streams  
[NASA-CASE-LAR-11139-1] c 35 N74-32878
- STAGNATION TEMPERATURE**
- Enthalpy and stagnation temperature determination of a high temperature laminar flow gas stream Patent  
[NASA-CASE-XLE-00266] c 14 N70-34156
- STAINING**
- Automated single-slide staining device  
[NASA-CASE-LAR-11649-1] c 51 N77-27677
- STAINLESS STEELS**
- Method of joining aluminum to stainless steel Patent  
[NASA-CASE-MFS-07369] c 15 N71-20443
- Ultrasonic scanning system for in-place inspection of brazed tube joints  
[NASA-CASE-MFS-20767-1] c 38 N74-15130
- Method of forming a wick for a heat pipe  
[NASA-CASE-NPO-13391-1] c 34 N76-27515
- Method of making reinforced composite structure  
[NASA-CASE-LEW-12619-1] c 24 N77-19171
- Moving body velocity arresting line — stainless steel cables with energy absorbing sleeves  
[NASA-CASE-LAR-12372-1] c 37 N82-18601
- Method of forming dynamic membrane on stainless steel support  
[NASA-CASE-MSC-18172-3] c 31 N88-29052
- STAMPING**
- Holding fixture for a hot stamping press  
[NASA-CASE-GSC-12619-1] c 37 N84-12491
- Ultrasonic angle beam standard reflector — ultrasonic nondestructive inspection  
[NASA-CASE-LAR-13153-1] c 71 N86-21276
- STANDARDS**
- Microwave integrated circuit for Josephson voltage standards  
[NASA-CASE-MFS-23845-1] c 33 N81-17348
- Ultrasonic angle beam standard reflector — ultrasonic nondestructive inspection  
[NASA-CASE-LAR-13153-1] c 71 N86-21276
- A reference standard for bidirectional reflection distribution function and bidirectional transmission distribution function measurement  
[NASA-CASE-MFS-28183-1] c 74 N89-13253
- STANDING WAVES**
- Method and apparatus for shaping and enhancing acoustical levitation forces  
[NASA-CASE-MFS-25050-1] c 71 N81-15767
- Image readout device with electronically variable spatial resolution  
[NASA-CASE-LAR-12633-1] c 33 N82-24416
- Acoustic levitation methods and apparatus  
[NASA-CASE-NPO-15562-1] c 71 N82-27086
- System for controlled acoustic rotation of objects  
[NASA-CASE-NPO-15522-1] c 71 N83-32516
- Vibrating-chamber levitation systems  
[NASA-CASE-NPO-16142-1-CU] c 35 N86-20752
- STAR TRACKERS**
- Roll attitude star sensor system Patent  
[NASA-CASE-XNP-01307] c 21 N70-41856
- Sun tracker with rotatable plane-parallel plate and two photocells Patent  
[NASA-CASE-XGS-01159] c 21 N71-10678
- Canopus detector including automotive gain control of photomultiplier tube Patent  
[NASA-CASE-XNP-03914] c 21 N71-10771
- Spacecraft attitude detection system by stellar reference Patent  
[NASA-CASE-XGS-03431] c 21 N71-15642
- Reference voltage switching unit  
[NASA-CASE-NPO-11253] c 09 N72-17157
- Star tracking reticles and process for the production thereof  
[NASA-CASE-GSC-11188-2] c 21 N73-19630
- Star tracking reticles  
[NASA-CASE-GSC-11188-1] c 14 N73-32320
- Formation of star tracking reticles  
[NASA-CASE-GSC-11188-3] c 74 N74-20008
- Star scanner — with a reticle with a pair of slits having differing separation  
[NASA-CASE-GSC-11569-1] c 89 N74-30886
- Programmable scan/read circuitry for charge coupled device imaging detectors — spacecraft attitude control and star trackers  
[NASA-CASE-NPO-15345-1] c 74 N84-23247
- STARK EFFECT**
- Resonant waveguide stark cell — using microwave spectrometers  
[NASA-CASE-LAR-11352-1] c 33 N75-26245
- Stark-effect modulation of CO<sub>2</sub> laser with NH<sub>2</sub>D  
[NASA-CASE-NPO-11945-1] c 36 N76-18427
- Stark cell optoacoustic detection of constituent gases in sample  
[NASA-CASE-NPO-14143-1] c 25 N81-14015
- Stark effect spectrophone for continuous absorption spectra monitoring — a technique for gas analysis  
[NASA-CASE-NPO-15102-1] c 25 N81-25159
- STARTERS**
- Starting circuit for vapor lamps and the like Patent  
[NASA-CASE-XNP-01058] c 09 N71-12540
- Motor run-up system — power lines  
[NASA-CASE-NPO-13374-1] c 33 N75-19524
- Motor power factor controller with a reduced voltage starter  
[NASA-CASE-MFS-25586-1] c 33 N82-11360
- STARTING**
- Portable device for use in starting air-start-units for aircraft and having cable lead testing capability  
[NASA-CASE-FRC-10113-1] c 33 N80-26599
- Arcjet power supply and start circuit  
[NASA-CASE-LEW-14374-1] c 09 N88-28939
- STATIC DEFORMATION**
- Acoustic radiation stress measurement  
[NASA-CASE-LAR-13440-1] c 71 N87-21653
- STATIC DISCHARGERS**
- Use of glow discharge in fluidized beds  
[NASA-CASE-ARC-11245-1] c 28 N82-18401
- STATIC FRICTION**
- Friction measuring apparatus Patent  
[NASA-CASE-XNP-08680] c 14 N71-22995
- Static coefficient test method and apparatus  
[NASA-CASE-GSC-11893-1] c 35 N76-31489
- STATIC INVERTERS**
- Static inverters which sum a plurality of waves Patent  
[NASA-CASE-XMF-00663] c 08 N71-18752
- Static inverter Patent  
[NASA-CASE-XGS-05289] c 09 N71-19470
- STATIC LOADS**
- Instrument for measuring torsional creep and recovery Patent  
[NASA-CASE-XLE-01481] c 14 N71-10781
- Tension measurement device Patent  
[NASA-CASE-XMS-04545] c 15 N71-22878
- STATIC PRESSURE**
- Aerodynamic measuring device Patent  
[NASA-CASE-XLA-00481] c 14 N70-36824
- Check valve assembly for a probe Patent  
[NASA-CASE-XLA-00128] c 15 N70-37925
- Static pressure probe  
[NASA-CASE-LAR-11552-1] c 35 N76-14429
- Static pressure orifice system testing method and apparatus  
[NASA-CASE-LAR-12269-1] c 35 N80-18358
- Apparatus and method for jet noise suppression  
[NASA-CASE-LAR-11903-2] c 71 N84-14873
- Porous plug for reducing orifice induced pressure error in airfoils  
[NASA-CASE-LAR-13569-1] c 35 N89-12841
- STATIONKEEPING**
- Station keeping of a gravity gradient stabilized satellite Patent  
[NASA-CASE-XLA-03132] c 31 N71-22969
- STATISTICAL ANALYSIS**
- Multistage estimation of received carrier signal parameters under very high dynamic conditions of the receiver  
[NASA-CASE-NPO-17911-1-CU] c 32 N90-27016
- STATISTICAL CORRELATION**
- Optical probing of supersonic flows with statistical correlation  
[NASA-CASE-MFS-20642] c 14 N72-21407
- STATOR BLADES**
- Stator rotor tools  
[NASA-CASE-MSC-16000-1] c 37 N78-24544
- STATORS**
- Nickel base alloy — for gas turbine engine stator vanes  
[NASA-CASE-LEW-12270-1] c 26 N77-32280
- Natural turbulence electrical power generator — using wave action or random motion  
[NASA-CASE-LAR-11551-1] c 44 N80-29834
- Brushless DC motor control system responsive to control signals generated by a computer or the like  
[NASA-CASE-NPO-16420-1] c 33 N86-20681
- Damping seal for turbomachinery  
[NASA-CASE-MFS-25842-2] c 37 N86-20788
- Radial and torsionally controlled magnetic bearing  
[NASA-CASE-GSC-12957-1] c 37 N87-17038
- Turbomachinery rotor support with damping  
[NASA-CASE-MFS-28345-1] c 37 N89-28841
- STEADY STATE**
- Steady state thermal radiometers  
[NASA-CASE-MFS-21108-1] c 34 N74-27861
- STEAM**
- Steam cooled rich-burn combustor liner  
[NASA-CASE-LEW-13609-1] c 25 N90-11824
- STEAM TURBINES**
- Boiler for generating high quality vapor Patent  
[NASA-CASE-XLE-00785] c 33 N71-16104
- STEELS**
- Potassium silicate zinc coatings  
[NASA-CASE-GSC-10361-1] c 18 N72-23581
- Ion-beam nitriding of steels  
[NASA-CASE-LEW-14104-2] c 26 N88-14179
- Magneto acoustic emission apparatus for testing materials for embrittlement  
[NASA-CASE-LAR-13817-1] c 26 N90-21170
- STEERABLE ANTENNAS**
- Array phasing device Patent  
[NASA-CASE-ERC-10046] c 10 N71-18722
- Satellite communication system Patent  
[NASA-CASE-XNP-02389] c 07 N71-28900
- Amplitude steered array  
[NASA-CASE-GSC-11446-1] c 33 N74-20860

Phased array antenna control  
[NASA-CASE-MSC-14939-1] c 32 N79-11264  
Switched steerable multiple beam antenna system  
[NASA-CASE-MSC-20873-1-SB] c 32 N89-11861

**STEERING**  
Steerable solid propellant rocket motor Patent  
[NASA-CASE-XNP-00234] c 28 N70-38645  
Closed-loop autonomous docking system  
[NASA-CASE-MFS-28421-1] c 18 N90-26861

**STELLAR LUMINOSITY**  
Radiant energy intensity measurement system Patent  
[NASA-CASE-XNP-06510] c 14 N71-23797

**STELLAR SPECTRA**  
Radiant energy intensity measurement system Patent  
[NASA-CASE-XNP-06510] c 14 N71-23797

**STENCIL PROCESSES**  
Method of tracing contour patterns for use in making gradual contour resin matrix composites  
[NASA-CASE-ARC-11246-1] c 31 N83-34073

**STEPPING MOTORS**  
Scanner — photography from a spin stabilized synchronous satellite  
[NASA-CASE-GSC-12032-2] c 43 N82-13465

**STEREOPHOTOGRAPHY**  
Stereo photomicrography system  
[NASA-CASE-LAR-10176-1] c 14 N72-20380  
Optical stereo video signal processor  
[NASA-CASE-MFS-25752-1] c 74 N86-21348

**STEREOSCOPIC VISION**  
Stereoscopic television system and apparatus  
[NASA-CASE-ARC-10180-1] c 23 N72-27728  
Television monitor field shifter and an opto-electronic method for obtaining a stereo image of optimal depth resolution and reduced depth distortion on a single screen  
[NASA-CASE-NPO-17249-1-CU] c 32 N89-28676

**STEREOSCOPY**  
Real-time 3-D X-ray and gamma-ray viewer  
[NASA-CASE-GSC-12640-1] c 74 N84-11920

**STERILIZATION**  
Process for preparing sterile solid propellants Patent  
[NASA-CASE-XNP-01749] c 27 N70-41897  
Processing for producing a sterilized instrument Patent  
[NASA-CASE-XNP-09763] c 14 N71-20461  
Air conditioned suit  
[NASA-CASE-LAR-10076-1] c 05 N73-20137  
Protein sterilization method of firefly luciferase using reduced pressure and molecular sieves  
[NASA-CASE-GSC-10225-1] c 06 N73-27086  
Heat sterilizable patient ventilator  
[NASA-CASE-NPO-13313-1] c 54 N75-27761  
Portable heatable container  
[NASA-CASE-NPO-14237-1] c 44 N80-20808  
System for sterilizing objects — cleaning space vehicle systems  
[NASA-CASE-KSC-11085-1] c 54 N81-24724

**STERILIZATION EFFECTS**  
Electrical connector  
[NASA-CASE-NPO-10694] c 09 N72-20200

**STIFFENING**  
Metal matrix composite structural panel construction  
[NASA-CASE-LAR-12807-1] c 24 N84-11214

**STIFFNESS**  
Modified face seal for positive film stiffness  
[NASA-CASE-LEW-12989-1] c 37 N82-12442

**STILBENE**  
Vinyl stilbazoles  
[NASA-CASE-ARC-11429-3CU] c 27 N87-16908

**STIMULATED EMISSION**  
Repetitively pulsed, wavelength selective laser Patent  
[NASA-CASE-ERC-10178] c 16 N71-24832

**STIRLING CYCLE**  
Stirling cycle engine and refrigeration systems  
[NASA-CASE-NPO-13613-1] c 37 N76-29590  
Power control for hot gas engines  
[NASA-CASE-NPO-14220-1] c 37 N81-14318  
Phase-angle controller for Stirling engines  
[NASA-CASE-NPO-14388-1] c 37 N81-17432  
Solar energy receiver for a Stirling engine  
[NASA-CASE-NPO-14619-1] c 44 N81-17518  
Hot gas engine with dual crankshafts  
[NASA-CASE-NPO-14221-1] c 37 N81-25370  
Stirling cycle cryogenic cooler  
[US-PATENT-4,389,849] c 44 N83-28574  
Magnetically actuated compressor  
[NASA-CASE-GSC-12799-1] c 31 N85-21404

**STIRLING ENGINES**  
Phase-angle controller for Stirling engines  
[NASA-CASE-NPO-14388-1] c 37 N81-17432  
Solar energy receiver for a Stirling engine  
[NASA-CASE-NPO-14619-1] c 44 N81-17518

**STIRRING**  
Stirring apparatus for plural test tubes Patent  
[NASA-CASE-XAC-06956] c 15 N71-21177

Planar oscillatory stirring apparatus  
[NASA-CASE-MFS-26002-1-CU] c 35 N86-26596

**STOICHIOMETRY**  
Sulfone-ester polymers containing pendent ethynyl groups  
[NASA-CASE-LAR-13316-1] c 27 N86-27450  
The 5-(4-Ethynylphenoxy) isophthalic chloride  
[NASA-CASE-LAR-13316-2] c 27 N87-14515  
MBE growth technology for high quality strained III-V layers  
[NASA-CASE-NPO-17723-1-CU] c 76 N90-26685  
Growth of III-V films by control of MBE growth front stoichiometry  
[NASA-CASE-NPO-17724-1-CU] c 76 N90-27517  
Method of forming three-dimensional semiconductor structures  
[NASA-CASE-NPO-17835-1-CU] c 76 N90-27518

**STORAGE**  
Fluid sample collector Patent  
[NASA-CASE-XMS-06767-1] c 14 N71-20435  
Sodium storage and injection system  
[NASA-CASE-NPO-14384-1] c 37 N80-10494

**STORAGE BATTERIES**  
Bonded elastomeric seal for electrochemical cells Patent  
[NASA-CASE-XGS-02631] c 03 N71-23006  
Automatic battery charger Patent  
[NASA-CASE-XNP-04758] c 03 N71-24605  
Electric battery and method for operating same Patent  
[NASA-CASE-XGS-01674] c 03 N71-29129  
Electric storage battery  
[NASA-CASE-NPO-11021] c 03 N72-20032  
Hydrogen-bromine secondary battery  
[NASA-CASE-NPO-13237-1] c 44 N76-18641  
Rechargeable battery which combats shape change of the zinc anode  
[NASA-CASE-HQN-10862-1] c 44 N76-29699  
Electrically rechargeable REDOX flow cell  
[NASA-CASE-LEW-12220-1] c 44 N77-14581  
Formulated plastic separators for soluble electrode cells — rubber-ion transport membranes  
[NASA-CASE-LEW-12358-1] c 44 N79-17313  
Toroidal cell and battery — storage battery for high amp-hour load applications  
[NASA-CASE-LEW-12918-1] c 44 N81-24521

**STORAGE STABILITY**  
Thermally activated foaming compositions Patent  
[NASA-CASE-LAR-10373-1] c 18 N71-26155  
Gas diffusion liquid storage bag and method of use for storing blood  
[NASA-CASE-NPO-13930-1] c 52 N79-14749  
Method for retarding dye fading during archival storage of developed color photographic film — inert atmosphere  
[NASA-CASE-MFS-23250-1] c 35 N82-11432

**STORAGE TANKS**  
Expulsion bladder-equipped storage tank structure Patent  
[NASA-CASE-XNP-00612] c 11 N70-38182  
Method for leakage testing of tanks Patent  
[NASA-CASE-XMF-02392] c 32 N71-24285  
Zero gravity shadow shield aligner  
[NASA-CASE-KSC-10622-1] c 31 N72-21893  
Cryogenic container compound suspension strap  
[NASA-CASE-ARC-11157-1] c 37 N80-18393  
System for venting gas from a liquid storage tank  
[NASA-CASE-MSC-21253-1] c 31 N90-20254

**STOWAGE (ONBOARD EQUIPMENT)**  
Hemispherical latching apparatus  
[NASA-CASE-MFS-25837-1] c 18 N85-29991  
Locking hinge  
[NASA-CASE-MSC-21056-1] c 18 N88-23827  
Expandable pallet for space station interface attachments  
[NASA-CASE-MSC-21117-1] c 18 N88-28958

**STRAIN DISTRIBUTION**  
Mechanical strain isolator mount  
[NASA-CASE-LAR-13580-1] c 37 N90-16272

**STRAIN GAGE ACCELEROMETERS**  
Accelerometer with FM output Patent  
[NASA-CASE-XLA-00492] c 14 N70-34799  
Angular accelerometer Patent  
[NASA-CASE-XMS-05936] c 14 N70-41682

**STRAIN GAGE BALANCES**  
Self-balancing strain gage transducer Patent  
[NASA-CASE-MFS-12827] c 14 N71-17656

**STRAIN GAGES**  
Semiconductor p-n junction stress and strain sensor  
[NASA-CASE-XLA-04980] c 09 N69-27422  
Wire grid forming apparatus Patent  
[NASA-CASE-XLE-00023] c 15 N70-33330  
Force measuring instrument Patent  
[NASA-CASE-XMF-00456] c 14 N70-34705  
Strain gage Patent Application  
[NASA-CASE-FRC-10053] c 14 N70-35587

Difference circuit Patent  
[NASA-CASE-XNP-08274] c 10 N71-13537  
Strain sensor for high temperatures Patent  
[NASA-CASE-XNP-09205] c 14 N71-17657

**EXTENSOMETER PATENT**  
[NASA-CASE-XMF-04680] c 15 N71-19489  
Strain gauge measuring techniques Patent  
[NASA-CASE-XGS-04478] c 14 N71-24233  
Method of temperature compensating semiconductor strain gages Patent  
[NASA-CASE-XLA-04555-1] c 14 N71-25892  
Pulsed excitation voltage circuit for transducers  
[NASA-CASE-FRC-10036] c 09 N72-22200  
Method of making semiconductor p-n junction stress and strain sensor  
[NASA-CASE-XLA-04680-2] c 14 N72-28438  
Device for monitoring a change in mass in varying gravimetric environments  
[NASA-CASE-MFS-21556-1] c 35 N74-26945  
Strain gauge ambiguity sensor for segmented mirror active optical system  
[NASA-CASE-MFS-20506-1] c 35 N75-12273  
Subminiature insertable force transducer — including a strain gage to measure forces in muscles  
[NASA-CASE-NPO-13423-1] c 33 N75-31329  
Self-supporting strain transducer  
[NASA-CASE-LAR-11263-1] c 35 N75-33369  
Strain gage mounting assembly  
[NASA-CASE-NPO-13170-1] c 35 N76-14430  
High temperature strain gage calibration fixture  
[NASA-CASE-LAR-11500-1] c 35 N76-24523  
Miniature biaxial strain transducer  
[NASA-CASE-LAR-11648-1] c 35 N77-14407  
CW ultrasonic bolt tensioning monitor  
[NASA-CASE-LAR-12016-1] c 39 N78-15512  
Attaching of strain gages to substrates  
[NASA-CASE-FRC-10093-1] c 35 N80-20560  
Photomechanical transducer  
[NASA-CASE-NPO-14363-1] c 39 N81-25400  
Pulsed phase locked loop strain monitor — voltage controlled oscillators  
[NASA-CASE-LAR-12772-1] c 33 N83-16626  
Inflatable device for installing strain gage bridges  
[NASA-CASE-FRC-11068-1] c 35 N84-12443  
Thin film strain transducer  
[NASA-CASE-WLP-10055-1] c 35 N84-28015  
Strain gage calibration  
[NASA-CASE-LAR-12743-1] c 35 N84-28019  
Thin film strain transducer — suitable for in-flight measurement of scientific balloon strain  
[NASA-CASE-WLP-10055-2] c 35 N85-21598  
Method of attaching strain gauges to various materials  
[NASA-CASE-LAR-13797-1] c 35 N88-30108

**STRAIN MEASUREMENT**  
Thin film strain transducer — suitable for in-flight measurement of scientific balloon strain  
[NASA-CASE-WLP-10055-2] c 35 N85-21598  
Radio Frequency (RF) strain monitor  
[NASA-CASE-LAR-13705-1] c 39 N88-25011

**STRAIN RATE**  
Light intensity strain analysis  
[NASA-CASE-LAR-10765-1] c 32 N73-20740  
Strain gage calibration  
[NASA-CASE-LAR-12743-1] c 35 N84-28019

**STRAKES**  
Helicopter anti-torque system using strakes  
[NASA-CASE-LAR-13233-1] c 05 N84-33400  
Helicopter anti-torque system using fuselage strakes  
[NASA-CASE-LAR-13630-1] c 08 N88-23809  
Actuated forebody strakes  
[NASA-CASE-LAR-13983-1] c 05 N90-23390

**STRANDS**  
Convergent strand array liquid pumping system  
[NASA-CASE-NPO-17301-1-CU] c 31 N90-23587

**STRAPDOWN INERTIAL GUIDANCE**  
All sky pointing attitude control system  
[NASA-CASE-ARC-10716-1] c 35 N77-20399

**STRAPS**  
Meter for use in detecting tension in straps having predetermined elastic characteristics  
[NASA-CASE-MFS-22189-1] c 35 N75-19615  
Cryogenic container compound suspension strap  
[NASA-CASE-ARC-11157-1] c 37 N80-18393

**STRATIGRAPHY**  
System for plotting subsoil structure and method therefor  
[NASA-CASE-NPO-14191-1] c 31 N80-32584

**STREAMS**  
Apparatus for measuring a sorbate dispersed in a fluid stream  
[NASA-CASE-ARC-10896-1] c 35 N78-19465

**STRESS ANALYSIS**  
Method and apparatus for measuring the damping characteristics of a structure  
[NASA-CASE-ARC-10154-1] c 14 N72-22440



- Light intensity strain analysis  
[NASA-CASE-LAR-10765-1] c 32 N73-20740
- High temperature strain gage calibration fixture  
[NASA-CASE-LAR-11500-1] c 35 N76-24523
- STRESS CONCENTRATION**  
Self-supporting strain transducer  
[NASA-CASE-LAR-11263-1] c 35 N75-33369
- STRESS CORROSION**  
Method of inhibiting stress corrosion cracks in titanium alloys Patent  
[NASA-CASE-NPO-10271] c 17 N71-16393  
Controlled glass bead peening Patent  
[NASA-CASE-XLA-07390] c 15 N71-18616
- STRESS MEASUREMENT**  
Semiconductor p-n junction stress and strain sensor  
[NASA-CASE-XLA-04880] c 09 N69-27422  
Force measuring instrument Patent  
[NASA-CASE-XMF-00456] c 14 N70-34705  
Self-balancing strain gage transducer Patent  
[NASA-CASE-MFS-12827] c 14 N71-17656  
Strain coupled servo control system Patent  
[NASA-CASE-XLA-08530] c 32 N71-25360  
Amplifying ribbon extensometer  
[NASA-CASE-LAR-11825-1] c 35 N77-22449  
CW ultrasonic bolt tensioning monitor  
[NASA-CASE-LAR-12016-1] c 39 N78-15512  
Acoustic radiation stress measurement  
[NASA-CASE-LAR-13440-1] c 71 N87-21653
- STRESS RELAXATION**  
Method for alleviating thermal stress damage in laminates — metal matrix composites  
[NASA-CASE-LEW-12493-1] c 24 N81-17170
- STRESS RELIEVING**  
All-directional fastener Patent  
[NASA-CASE-XLA-01807] c 15 N71-10799  
Steam cooled rich-burn combustor liner  
[NASA-CASE-LEW-13609-1] c 25 N90-11824
- STRESSES**  
Tape recorder Patent  
[NASA-CASE-XGS-08259] c 14 N71-23698  
Strain gauge measuring techniques Patent  
[NASA-CASE-XGS-04478] c 14 N71-24233  
Strain arrestor plate for fused silica tile — bonding of thermal insulation to metallic plates or structural parts  
[NASA-CASE-MSC-14182-1] c 27 N76-14264  
Fixture for environmental exposure of structural materials under compression load  
[NASA-CASE-LAR-12602-1] c 39 N83-32081
- STRETCHERS**  
Rescue litter flotation assembly Patent  
[NASA-CASE-XMS-04170] c 05 N71-22748  
Stretcher Patent  
[NASA-CASE-XMF-06589] c 05 N71-23159
- STRETCHING**  
Fastener stretcher  
[NASA-CASE-GSC-11149-1] c 15 N73-30457
- STRINGERS**  
Preloaded space structural coupling joints  
[NASA-CASE-LAR-13489-1] c 18 N87-27713
- STRINGS**  
Omnidirectional joint Patent  
[NASA-CASE-XMS-09635] c 05 N71-24623
- STRIP TRANSMISSION LINES**  
Microwave integrated circuit for Josephson voltage standards  
[NASA-CASE-MFS-23845-1] c 33 N81-17348  
Microwave switching power divider — antenna feeds  
[NASA-CASE-GSC-12420-1] c 33 N82-18340
- STRUCTURAL ANALYSIS**  
Window defect planar mapping technique  
[NASA-CASE-MSC-19442-1] c 74 N77-10899
- STRUCTURAL DESIGN**  
Life raft Patent  
[NASA-CASE-XMS-00863] c 05 N70-34857  
High pressure regulator valve Patent  
[NASA-CASE-XNP-00710] c 15 N71-10778  
Lifting body Patent Application  
[NASA-CASE-FRC-10063] c 01 N71-12217  
Ring wing tension vehicle Patent  
[NASA-CASE-XLA-04901] c 31 N71-24315  
Opto-mechanical subsystem with temperature compensation through isothermal design  
[NASA-CASE-GSC-12059-1] c 35 N77-27366  
Lightweight reflector assembly  
[NASA-CASE-NPO-13707-1] c 74 N77-28933  
Horizontally mounted solar collector  
[NASA-CASE-MFS-23349-1] c 44 N79-23481  
Fluid flow meter for measuring the rate of fluid flow in a conduit  
[NASA-CASE-MFS-28030-1] c 35 N86-25752  
Remotely controlled spray gun  
[NASA-CASE-MFS-28110-1] c 37 N87-24689  
Improved method and apparatus for waste collection and storage  
[NASA-CASE-MSC-21025-1] c 31 N87-25495
- Smart tunnel: Docking mechanism  
[NASA-CASE-MSC-21360-1] c 18 N89-25263  
Space station architecture, module, berthing hub, shell assembly, berthing mechanism and utility connection channel  
[NASA-CASE-ARC-11505-2] c 18 N89-25266  
Hybrid butterfly valve  
[NASA-CASE-SSC-00004] c 37 N90-15443  
Organic cathode for a secondary battery  
[NASA-CASE-NPO-17604-1-CU] c 33 N90-16124  
High-pressure promoted combustion chamber  
[NASA-CASE-MSC-21470-1] c 09 N90-16771  
Suiport extra-vehicular access facility  
[NASA-CASE-ARC-11635-1] c 18 N90-16860  
Thermal switch disc for short circuit protection of batteries  
[NASA-CASE-MSC-21428-1] c 33 N90-17008  
Noncontact temperature pattern measuring device  
[NASA-CASE-NPO-17824-1-CU] c 36 N90-17132  
Mechanized fluid connector and assembly tool system  
[NASA-CASE-MSC-21434-1] c 37 N90-17138  
Releasable clamping apparatus  
[NASA-CASE-MFS-28182-1] c 37 N90-17154  
Bio-reactor chamber  
[NASA-CASE-MSC-20929-1] c 51 N90-17252  
Cable suspended windmill  
[NASA-CASE-LAR-13434-1] c 37 N90-23742  
Improved high power/high frequency inductor  
[NASA-CASE-NPO-17830-1-CU] c 33 N90-27042
- STRUCTURAL DESIGN CRITERIA**  
Compliant hydrodynamic fluid journal bearing  
[NASA-CASE-LEW-13670-1] c 37 N88-19606  
Geometries for roughness shapes in laminar flow  
[NASA-CASE-LAR-13255-1] c 02 N87-16793
- STRUCTURAL ENGINEERING**  
Beam connector apparatus and assembly  
[NASA-CASE-MFS-25134-1] c 31 N83-31895
- STRUCTURAL FAILURE**  
Method and apparatus for nondestructive testing of pressure vessels  
[NASA-CASE-NPO-12142-1] c 38 N76-28563
- STRUCTURAL MEMBERS**  
Broadband choke for antenna structure  
[NASA-CASE-XMS-05303] c 07 N69-27462  
Optical alignment system Patent  
[NASA-CASE-XNP-02029] c 14 N70-41955  
All-directional fastener Patent  
[NASA-CASE-XLA-01807] c 15 N71-10799  
Frictionless universal joint Patent  
[NASA-CASE-NPO-10646] c 15 N71-28467  
Fastener stretcher  
[NASA-CASE-GSC-11149-1] c 15 N73-30457  
Method of laminating structural members  
[NASA-CASE-XLA-11028-1] c 24 N74-27035  
Folding structure fabricated of rigid panels  
[NASA-CASE-XHQ-02146] c 18 N75-27040  
Strain arrestor plate for fused silica tile — bonding of thermal insulation to metallic plates or structural parts  
[NASA-CASE-MSC-14182-1] c 27 N76-14264  
Mechanical end joint system for structural column elements  
[NASA-CASE-LAR-12482-1] c 37 N82-32732  
Daze fasteners  
[NASA-CASE-LAR-13009-1] c 37 N85-29285  
Synchronously deployable double fold beam and planar truss structure  
[NASA-CASE-LAR-13490-1] c 18 N87-14413  
Daze fasteners  
[NASA-CASE-LAR-13009-2] c 37 N87-22976
- STRUCTURAL STABILITY**  
Latching device  
[NASA-CASE-MFS-21606-1] c 37 N75-19685  
Flanged major modular assembly jig  
[NASA-CASE-MSC-18372-1] c 39 N76-31562  
Deployable M-braced truss structure  
[NASA-CASE-LAR-13081-1] c 37 N86-32737
- STRUCTURAL VIBRATION**  
Electrical connector Patent Application  
[NASA-CASE-MFS-14741] c 09 N70-20737  
Seismic displacement transducer Patent  
[NASA-CASE-XMF-00479] c 14 N70-34794  
Vibrating structure displacement measuring instrument Patent  
[NASA-CASE-XLA-03135] c 32 N71-16428  
Active notch filter network with variable notch depth, width and frequency  
[NASA-CASE-FRC-11055-1] c 33 N80-29583
- STRUCTURES**  
Arbitrarily shaped model survey system Patent  
[NASA-CASE-LAR-10098] c 32 N71-26681
- STRUTS**  
Energy absorbing structure Patent Application  
[NASA-CASE-MSC-12279-1] c 15 N70-35679  
Collapsible structure for an antenna reflector  
[NASA-CASE-NPO-11751] c 07 N73-24176
- Locking redundant link  
[NASA-CASE-LAR-11800-1] c 37 N79-14382  
Multiple pure tone elimination strut assembly — air breathing engines  
[NASA-CASE-FRC-11062-1] c 71 N82-16800  
Variable length strut with longitudinal compliance and locking capability  
[NASA-CASE-MFS-25907-1] c 37 N85-34401
- STUDS (STRUCTURAL MEMBERS)**  
Safety-type locking pin  
[NASA-CASE-MFS-18495] c 15 N72-11385  
Stud-bonding gun  
[NASA-CASE-MFS-20299] c 15 N72-11392  
Insert facing tool — manually operated cutting tool for forming studs in honeycomb material  
[NASA-CASE-MFS-21485-1] c 37 N74-25968
- STYRENES**  
Heat resistant polymers of oxidized styrylphosphine  
[NASA-CASE-MSC-14903-1] c 27 N78-32256  
Compound oxidized styrylphosphine — flame resistant vinyl polymers  
[NASA-CASE-MSC-14903-2] c 27 N80-10358  
Heat resistant polymers of oxidized styrylphosphine  
[NASA-CASE-MSC-14903-3] c 27 N80-24438  
Stabilized unsaturated polyesters  
[NASA-CASE-NPO-16103-1] c 27 N85-29043
- SUBASSEMBLIES**  
Multistage spent particle collector and a method for making same  
[NASA-CASE-LEW-13914-1] c 37 N85-33489
- SUBCRITICAL FLOW**  
Method for growth of crystals by pressure reduction of supercritical or subcritical solution  
[NASA-CASE-NPO-15772-1] c 76 N85-29800
- SUBLIMATION**  
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[NASA-CASE-NPO-16542-1-CU] c 36 N87-23960

Arc-textured high emittance radiator surfaces  
[NASA-CASE-LEW-14679-1] c 27 N89-28651

Quantitative surface temperature measurement using two-color thermographic phosphors and video equipment  
[NASA-CASE-LAR-13740-1] c 35 N90-22770

**SURFACE ROUGHNESS**  
Surface roughness detector Patent  
[NASA-CASE-XLA-00203] c 14 N70-34181

Optical inspection apparatus Patent  
[NASA-CASE-XMF-00462] c 14 N70-34298

Contour surveying system Patent  
[NASA-CASE-XLA-08646] c 14 N71-17586

Surface roughness measuring system — synthetic aperture radar measurements of ocean wave height and terrain peaks  
[NASA-CASE-NPO-13862-1] c 35 N79-10391

Texturing polymer surfaces by transfer casting — cardiovascular prosthesis  
[NASA-CASE-LEW-13120-1] c 27 N82-28440

Ion sputter textured graphite — anode collector plates in electron tube devices  
[NASA-CASE-LEW-12919-1] c 24 N83-10117

Ion sputter textured graphite electrode plates  
[NASA-CASE-LEW-12919-2] c 70 N84-28565

**SURFACE ROUGHNESS EFFECTS**  
Meteorological balloon Patent  
[NASA-CASE-XLA-04163] c 02 N71-23007

**SURFACE TEMPERATURE**  
Curved film cooling admission tube  
[NASA-CASE-LEW-13174-1] c 34 N83-27144

**SURFACE VEHICLES**  
Optimal control system for an electric motor driven vehicle  
[NASA-CASE-NPO-11210] c 11 N72-20244

Vehicle for use in planetary exploration  
[NASA-CASE-NPO-11366] c 11 N73-26238

Short range laser obstacle detector — for surface vehicles using laser diode array  
[NASA-CASE-NPO-11856-1] c 36 N74-15146

Vehicle locating system utilizing AM broadcasting station carriers  
[NASA-CASE-NPO-13217-1] c 32 N75-26194

Vehicular impact absorption system  
[NASA-CASE-NPO-14014-1] c 37 N79-10420

Personnel emergency carrier vehicle  
[NASA-CASE-KSC-11282-1] c 85 N87-21755

Articulated suspension system  
[NASA-CASE-NPO-17354-1-CU] c 37 N90-17153

## SURFACE WAVES

- Antenna design for surface wave suppression Patent  
[NASA-CASE-XLA-10772] c 07 N71-28980  
Solar energy converter using surface plasma waves  
[NASA-CASE-LEW-13827-1] c 44 N85-21768  
Dual differential interferometer  
[NASA-CASE-LAR-12966-1] c 35 N85-30282

## SURFACES

- Recoverable rocket vehicle, Patent  
[NASA-CASE-XMF-00389] c 31 N70-34176  
Friction measuring apparatus Patent  
[NASA-CASE-XNP-08680] c 14 N71-22995  
Three-axis adjustable loading structure  
[NASA-CASE-FRC-10051-1] c 35 N74-13129  
Photoelectron spectrometer with means for stabilizing sample surface potential  
[NASA-CASE-NPO-13772-1] c 35 N78-10429

## SURFACTANTS

- Surfactant-assisted liquefaction of particulate carbonaceous substances  
[NASA-CASE-NPO-13904-1] c 25 N79-11152

## SURGERY

- Tissue macerating instrument  
[NASA-CASE-LEW-12668-1] c 52 N78-14773  
Intra-ocular pressure normalization technique and equipment  
[NASA-CASE-LEW-12955-1] c 52 N80-14684  
Process of making medical clip  
[NASA-CASE-LAR-12650-2] c 52 N84-28389

## SURGES

- Transient-compensated SCR inverter  
[NASA-CASE-XLA-08507] c 09 N69-39984  
Turn on transient limiter Patent  
[NASA-CASE-GSC-10413] c 10 N71-26531

## SURGICAL INSTRUMENTS

- Ophthalmic method and apparatus  
[NASA-CASE-LEW-11869-1] c 05 N73-27062  
Ophthalmic liquefaction pump  
[NASA-CASE-LEW-12051-1] c 52 N75-33640  
Cutting head for ultrasonic lithotripsy  
[NASA-CASE-GSC-12944-1] c 52 N86-19885

## SURVIVAL EQUIPMENT

- Survival couch Patent  
[NASA-CASE-XLA-00118] c 05 N70-33285  
Life preserver Patent  
[NASA-CASE-XMS-00884] c 05 N70-38493  
Soft frame adjustable eyeglasses Patent  
[NASA-CASE-XMS-06064] c 05 N71-23096

## SUSPENDING (HANGING)

- Parallel motion suspension device Patent  
[NASA-CASE-XNP-01567] c 15 N70-41310  
Reduced gravity simulator Patent  
[NASA-CASE-XLA-01787] c 11 N71-16028  
Suspended mass impact damper Patent  
[NASA-CASE-LAR-10193-1] c 15 N71-27146  
Airfoil flutter model suspension system  
[NASA-CASE-LAR-13522-1-SB] c 09 N87-25334  
A torsional suspension system for testing space structures  
[NASA-CASE-LAR-14149-1-SB] c 14 N89-28547  
Electrostatically suspended rotor for angular encoder  
[NASA-CASE-MFS-28294-1] c 31 N90-10310  
Hanging drop crystal growth apparatus and method  
[NASA-CASE-MFS-28206-1-SB] c 76 N90-23242  
Cable suspended windmill  
[NASA-CASE-LAR-14344-1] c 37 N90-23742  
Suspension mechanism and method  
[NASA-CASE-LAR-14142-1] c 37 N90-27116

## SUSPENSION SYSTEMS (VEHICLES)

- Suspension system for a wheel rolling on a flat track — bearings for directional antennas  
[NASA-CASE-NPO-14395-1] c 37 N82-21587  
Articulated suspension system  
[NASA-CASE-NPO-17354-1-CU] c 37 N90-17153

## SWEAT

- Sweat collection capsule  
[NASA-CASE-ARC-11031-1] c 52 N81-29763

## SWEAT COOLING

- Transpiration cooled turbine blade manufactured from wires Patent  
[NASA-CASE-XLE-00020] c 15 N70-33226  
Transpirationally cooled heat ablation system Patent  
[NASA-CASE-XMS-02677] c 31 N70-42075  
Method of electroforming a rocket chamber  
[NASA-CASE-LEW-11118-1] c 20 N74-32919

## SWEEP CIRCUITS

- Multiple slope sweep generator Patent  
[NASA-CASE-XMS-03542] c 09 N71-28926

## SWEEP EFFECT

- High speed flight vehicle control Patent  
[NASA-CASE-XLA-08967] c 02 N71-27088  
Acoustically swept rotor — helicopter noise reduction  
[NASA-CASE-ARC-11106-1] c 05 N80-14107

## SWEEP FREQUENCY

- Swept group delay measurement  
[NASA-CASE-NPO-13909-1] c 33 N78-25319

## SWELLING

- Intumescent composition, foamed product prepared therewith, and process for making same  
[NASA-CASE-ARC-10304-1] c 18 N73-26572

## SWEEP FORWARD WINGS

- High performance forward swept wing aircraft  
[NASA-CASE-ARC-11636-1] c 05 N88-28914

## SWEEP WINGS

- Supersonic aircraft Patent  
[NASA-CASE-XLA-04451] c 02 N71-12243

## SWIRLING

- Slosh alleviator Patent  
[NASA-CASE-XLA-05749] c 15 N71-19569  
Swirl can primary combustor  
[NASA-CASE-LEW-11326-1] c 23 N73-30665  
Flow modifying device  
[NASA-CASE-LEW-13562-2] c 07 N85-35195  
Vortex motion phase separator for zero gravity liquid transfer  
[NASA-CASE-KSC-11387-1] c 29 N90-20236

## SWITCHES

- Switching mechanism with energy storage means Patent  
[NASA-CASE-XGS-00473] c 03 N70-38713  
Digital memory in which the driving of each word location is controlled by a switch core Patent  
[NASA-CASE-XNP-01466] c 10 N71-26434  
RF controlled solid state switch  
[NASA-CASE-ARC-10136-1] c 09 N72-22202  
High power RF coaxial switch  
[NASA-CASE-NPO-14229-1] c 33 N80-18285  
Automatic thermal switch  
[NASA-CASE-GSC-12415-1] c 33 N82-24419  
Fiber optic crossbar switch for automatically patching optical signals  
[NASA-CASE-KSC-11104-1] c 74 N83-29032  
Triac failure detector  
[NASA-CASE-MFS-25607-1] c 33 N83-34190  
Heat pipe thermal switch  
[NASA-CASE-GSC-12812-1] c 34 N83-35307  
Three-phase power factor controller with induced EMF sensing  
[NASA-CASE-MFS-25652-1] c 33 N84-33661  
Laser activated MTOS microwave device  
[NASA-CASE-NPO-16112-1] c 33 N86-19516  
Self-actuating heat switches for redundant refrigeration systems  
[NASA-CASE-NPO-17085-1-CU] c 31 N89-12785  
Thermal switch disc for short circuit protection of batteries  
[NASA-CASE-MSC-21428-1] c 33 N90-17008  
Solid state electrical switch employing materials with reversible phase transistors  
[NASA-CASE-NPO-17621-1-CU] c 33 N90-17010  
Long period pseudo random number sequence generator  
[NASA-CASE-NPO-17241-1-CU] c 33 N90-23636

## SWITCHING

- Phase detector for three-phase power factor controller  
[NASA-CASE-MFS-25854-1] c 33 N84-27975  
Long period pseudo random number sequence generator  
[NASA-CASE-NPO-17241-1-CU] c 33 N90-23636

## SWITCHING CIRCUITS

- Solid state switch  
[NASA-CASE-XNP-09228] c 09 N69-27500  
Power control circuit  
[NASA-CASE-XNP-02713] c 10 N69-39888  
A method for selective gold diffusion of monolithic silicon devices and/or circuits Patent application  
[NASA-CASE-ERC-10072] c 09 N70-11148  
Space vehicle electrical system Patent  
[NASA-CASE-XMF-00517] c 03 N70-34157  
High speed low level electrical stepping switch Patent  
[NASA-CASE-XAC-00060] c 09 N70-39915  
Switching circuit employing regeneratively connected complementary transistors Patent  
[NASA-CASE-XNP-02654] c 10 N70-42032  
Electronic beam switching commutator Patent  
[NASA-CASE-XGS-01451] c 09 N71-10677  
Electronic amplifier with power supply switching Patent  
[NASA-CASE-XMS-00945] c 09 N71-10798  
SCR blocking pulse gate amplifier Patent  
[NASA-CASE-XLA-07497] c 09 N71-12514  
Magnetic core current steering commutator Patent  
[NASA-CASE-NPO-10201] c 08 N71-18694  
A dc-coupled noninverting one-shot Patent  
[NASA-CASE-XNP-09450] c 10 N71-18723  
Reversible current control apparatus Patent  
[NASA-CASE-XLA-09371] c 10 N71-18724  
Exclusive-Or digital logic module Patent  
[NASA-CASE-XLA-07732] c 08 N71-18751  
Polarization diversity monopulse tracking receiver Patent  
[NASA-CASE-XGS-03501] c 09 N71-20864

- Sight switch using an infrared source and sensor Patent  
[NASA-CASE-XMF-03934] c 09 N71-22985  
Complementary regenerative switch Patent  
[NASA-CASE-XGS-02751] c 09 N71-23015  
Drive circuit utilizing two cores Patent  
[NASA-CASE-XNP-01318] c 10 N71-23033  
Pulse modulator providing fast rise and fall times Patent  
[NASA-CASE-XMS-04918] c 09 N71-23270  
Polarity sensitive circuit Patent  
[NASA-CASE-XNP-00952] c 10 N71-23271  
Increasing efficiency of switching type regulator circuits Patent  
[NASA-CASE-XMS-09352] c 09 N71-23316  
Indexing microwave switch Patent  
[NASA-CASE-XNP-06507] c 09 N71-23548  
Multialarm summary alarm Patent  
[NASA-CASE-XLE-03061-1] c 10 N71-24798  
Switching circuit Patent  
[NASA-CASE-XNP-06505] c 10 N71-24799  
Inverter with means for base current shaping for sweeping charge carriers from base region Patent  
[NASA-CASE-XGS-06226] c 10 N71-25950  
Current steering switch Patent  
[NASA-CASE-XNP-08567] c 09 N71-26000  
Control apparatus for applying pulses of selectively predetermined duration to a sequence of loads Patent  
[NASA-CASE-XGS-04224] c 10 N71-26418  
Turn on transient limiter Patent  
[NASA-CASE-GSC-10413] c 10 N71-26531  
Method and means for providing an absolute power measurement capability Patent  
[NASA-CASE-ERC-11020] c 14 N71-26774  
Transistor drive regulator Patent  
[NASA-CASE-LEW-10233] c 10 N71-27126  
Compensating bandwidth switching transients in an amplifier circuit Patent  
[NASA-CASE-XNP-01107] c 10 N71-28859  
Monostable multivibrator with complementary NOR gates Patent  
[NASA-CASE-MSC-13482-1] c 10 N71-28860  
Digital memory sense amplifying means Patent  
[NASA-CASE-XNP-01012] c 08 N71-28925  
Current regulating voltage divider  
[NASA-CASE-MFS-20935] c 09 N71-34212  
Reference voltage switching unit  
[NASA-CASE-NPO-11253] c 09 N72-17157  
Optimum performance spacecraft solar cell system  
[NASA-CASE-GSC-10669-1] c 03 N72-20031  
Flow rate switch  
[NASA-CASE-NPO-10722] c 09 N72-20199  
Switching regulator  
[NASA-CASE-LEW-11005-1] c 09 N72-21243  
Data multiplexer using tree switching configuration  
[NASA-CASE-NPO-11333] c 08 N72-22162  
Pulse coupling circuit  
[NASA-CASE-LEW-10433-1] c 09 N72-22197  
Solid state remote circuit selector switch  
[NASA-CASE-LEW-10387] c 09 N72-22201  
Pressure operated electrical switch responsive to a pressure decrease after a pressure increase  
[NASA-CASE-LAR-10137-1] c 09 N72-22204  
Fast response low power drain logic circuits  
[NASA-CASE-GSC-10878-1] c 10 N72-22236  
CRT blanking and brightness control circuit  
[NASA-CASE-KSC-10647-1] c 10 N72-31273  
Electronic video editor  
[NASA-CASE-KSC-10003] c 10 N73-13235  
Radiation sensitive solid state switch  
[NASA-CASE-NPO-10817-1] c 08 N73-30135  
Transparent switchboard  
[NASA-CASE-MSC-13746-1] c 10 N73-32143  
High isolation RF signal selection switches  
[NASA-CASE-NPO-13081-1] c 33 N74-22814  
Isolated output system for a class D switching-mode amplifier  
[NASA-CASE-MFS-21616-1] c 33 N75-30429  
Dual digital video switcher  
[NASA-CASE-KSC-10782-1] c 33 N75-30431  
Multi-computer multiple data path hardware exchange system  
[NASA-CASE-NPO-13422-1] c 60 N76-14818  
Sustained arc ignition system  
[NASA-CASE-LEW-12444-1] c 33 N77-28385  
Window comparator  
[NASA-CASE-FRC-10090-1] c 33 N78-18308  
Module failure isolation circuit for paralleled inverters — preventing system failure during power conditioning for spacecraft applications  
[NASA-CASE-NPO-14000-1] c 33 N79-24254  
System for automatically switching transformer coupled lines  
[NASA-CASE-MSC-16697-1] c 33 N79-28415  
Self-reconfiguring solar cell system  
[NASA-CASE-LEW-12586-1] c 44 N80-14472

- Push-pull converter with energy saving circuit for protecting switching transistors from peak power stress [NASA-CASE-NPO-14318-1] c 33 N81-33404
- Microwave switching power divider — antenna feeds [NASA-CASE-GSC-12420-1] c 33 N82-16340
- Control means for a solid state crossbar switch [NASA-CASE-NPO-15068-1] c 33 N82-28538
- Active lamp pulse driver circuit — optical pumping of laser media [NASA-CASE-GSC-12566-1] c 33 N83-34189
- Pulsed thyristor trigger control circuit [NASA-CASE-MFS-25616-1] c 33 N84-16455
- Simplified dc to dc converter [NASA-CASE-LEW-13495-1] c 33 N84-33663
- Hybrid power semiconductor [NASA-CASE-LEW-13922-1] c 33 N86-20672
- Four quadrant control circuit for a brushless three-phase dc motor [NASA-CASE-MFS-26080-1] c 33 N87-21233
- Optical shutter switching matrix [NASA-CASE-KSC-11392-1] c 74 N90-22383
- SWITCHING THEORY**
- Multiple circuit switch apparatus with improved pivot actuator structure Patent [NASA-CASE-XAC-03777] c 10 N71-15909
- SWIVELS**
- Swivel support for gas bearings Patent [NASA-CASE-XMF-07808] c 15 N71-23812
- Double swivel toggle release [NASA-CASE-MSC-21436-1] c 37 N90-21390
- SYNAPSES**
- Analog hardware for delta-backpropagation neural networks [NASA-CASE-NPO-17564-1-CU] c 32 N90-16974
- SYNCHRONISM**
- Time division multiplex system [NASA-CASE-XGS-05918] c 07 N69-39974
- Means for generating a sync signal in an FM communication system Patent [NASA-CASE-XNP-10830] c 07 N71-11281
- Method of resolving clock synchronization error and means therefor Patent [NASA-CASE-XNP-08875] c 10 N71-23099
- Passive synchronized spike generator with high input impedance and low output impedance and capacitor power supply Patent [NASA-CASE-XGS-03632] c 09 N71-23311
- Time synchronization system utilizing moon reflected coded signals Patent [NASA-CASE-NPO-10143] c 10 N71-26326
- Rapid sync acquisition system Patent [NASA-CASE-NPO-10214] c 10 N71-26577
- Synchronized voltage contrast display analysis system [NASA-CASE-NPO-14567-1] c 33 N83-18996
- SYNCHRONIZED OSCILLATORS**
- Phase demodulation system with two phase locked loops Patent [NASA-CASE-XNP-00777] c 10 N71-19469
- Phase locked phase modulator including a voltage controlled oscillator Patent [NASA-CASE-XNP-05382] c 10 N71-23544
- Automatic frequency control loop including synchronous switching circuits [NASA-CASE-KSC-10393] c 09 N72-21247
- SYNCHRONIZERS**
- Burst synchronization detection system Patent [NASA-CASE-XMS-05605-1] c 10 N71-19468
- Time division radio relay synchronizing system using different sync code words for in sync and out of sync conditions Patent [NASA-CASE-GSC-10373-1] c 07 N71-19773
- Synchronous servo loop control system Patent [NASA-CASE-XNP-03744] c 10 N71-20448
- Digital synchronizer Patent [NASA-CASE-NPO-10851] c 07 N71-24613
- Video sync processor Patent [NASA-CASE-KSC-10002] c 10 N71-25865
- Pulse code modulated signal synchronizer [NASA-CASE-MSC-12462-1] c 32 N74-20809
- Pulse code modulated signal synchronizer [NASA-CASE-MSC-12494-1] c 32 N74-20810
- System for generating timing and control signals [NASA-CASE-NPO-13125-1] c 33 N75-19519
- Telemetry synchronizer [NASA-CASE-GSC-11868-1] c 17 N76-22245
- Memory-based frame synchronizer — for digital communication systems [NASA-CASE-GSC-12430-1] c 60 N82-16747
- SYNCHRONOUS MOTORS**
- Synchronous dc direct drive system Patent [NASA-CASE-GSC-10065-1] c 10 N71-27136
- Motor run-up system — power lines [NASA-CASE-NPO-13374-1] c 33 N75-19524
- SYNCHRONOUS SATELLITES**
- Position location system and method Patent [NASA-CASE-GSC-10087-2] c 21 N71-13958
- Serrodyne frequency converter re-entrant amplifier system Patent [NASA-CASE-XGS-01022] c 07 N71-16088
- Traffic control system and method Patent [NASA-CASE-GSC-10087-1] c 02 N71-19287
- Tracking antenna system Patent [NASA-CASE-GSC-10553-1] c 07 N71-19854
- Satellite interface synchronization system [NASA-CASE-GSC-10390-1] c 07 N72-11149
- Synchronous orbit battery cyclor [NASA-CASE-GSC-11211-1] c 03 N72-25020
- Systems and methods for determining radio frequency interference [NASA-CASE-GSC-12150-1] c 32 N79-11265
- Satellite personal communications system [NASA-CASE-NPO-14480-1] c 32 N80-20448
- SYNTHESIS**
- Synthesis of polymeric schiff bases by schiff-base exchange reactions Patent [NASA-CASE-XMF-08651] c 06 N71-11238
- Preparation of ordered poly /arylenesiloxane/ polymers [NASA-CASE-XMF-10753] c 06 N71-11237
- Imidazopyrrolone/imide copolymers Patent [NASA-CASE-XLA-08802] c 06 N71-11238
- Preparation of polyimides from mixtures of monomeric diamines and esters of polycarboxylic acids [NASA-CASE-LEW-11325-1] c 06 N73-27880
- SYNTHESIS (CHEMISTRY)**
- Prepolymer dianhydrides [NASA-CASE-NPO-13899-1] c 27 N80-32515
- Viscoelastic cationic polymers containing the urethane linkage [NASA-CASE-NPO-10830-1] c 27 N81-15104
- Bifunctional monomers having terminal oxime and cyano or amine groups [NASA-CASE-ARC-11253-3] c 27 N81-24256
- Synthesis of polyformals [NASA-CASE-ARC-11244-1] c 23 N82-16174
- Electrically conductive palladium containing polyimide films [NASA-CASE-LAR-12705-1] c 25 N82-26396
- Polyvinyl alcohol cross-linked with two aldehydes [NASA-CASE-LEW-13504-1] c 25 N83-13188
- Synthesis of dawsonites — for use in fire extinguishing operations [NASA-CASE-ARC-11326-1] c 25 N83-33977
- Solvent resistant thermoplastic aromatic poly(imidesulfone) and process for preparing same [NASA-CASE-LAR-12658-1] c 27 N83-34041
- Polypyrrole ethers with imide linking groups [NASA-CASE-LAR-12980-1] c 27 N84-22749
- Phenoxy resins containing pendent ethynyl groups and cured resins obtained therefrom [NASA-CASE-LAR-13262-1] c 23 N85-28973
- Synthesis of 2,4,8,10-tetraoxaspiro[5.5]undecane [NASA-CASE-ARC-11243-2] c 23 N85-33187
- Fire-resistant phosphorus containing polyimides and copolyimides [NASA-CASE-ARC-11522-2] c 27 N85-34280
- Metal phthalocyanine intermediates for the preparation of polymers [NASA-CASE-ARC-11405-2] c 27 N86-19455
- Copolymers of vinyl styrylpyridines or vinyl stilbazoles with bismaleimide [NASA-CASE-ARC-11429-1-CU] c 27 N86-20560
- Perfluoro (imidoylamidine) diamidines [NASA-CASE-ARC-11402-3] c 23 N86-21582
- Ethynyl and substituted ethynyl-terminated polysulfones [NASA-CASE-LAR-12931-2] c 27 N86-21675
- Sulfone-ester polymers containing pendent ethynyl groups [NASA-CASE-LAR-13316-1] c 27 N86-27450
- Polymer of phosphonylmethyl-2,4- and -2,6-diamino benzene and polyfunctional monomer [NASA-CASE-ARC-11506-2] c 23 N86-32525
- Polyarylene ethers with improved properties [NASA-CASE-LAR-13555-1] c 23 N86-32526
- The 5-(4-Ethynylphenoxy) isophthalic chloride [NASA-CASE-LAR-13316-2] c 27 N87-14515
- Acetylene (ethynyl) terminated polyimide siloxane and process for preparation thereof [NASA-CASE-LAR-13318-1] c 27 N87-14516
- Ethynyl terminated ester oligomers and polymers therefrom [NASA-CASE-LAR-13118-2] c 27 N87-16907
- Process for preparing phthalocyanine polymer from imide containing bisphthalonitrile [NASA-CASE-ARC-11511-2] c 27 N87-21112
- Polybenzoxazines from aromatic diacetylenic diketones and diamines [NASA-CASE-LAR-13444-1-CU] c 27 N87-22847
- Preparation of B-trichloroborazine [NASA-CASE-ARC-11643-1-SB] c 23 N87-23698
- Fire and heat resistant laminating resins based on maleimide and citraconimide substituted 1-(diorgano oxyphosphoryl) methyl -2,4- and -2,6- diaminobenzenes [NASA-CASE-ARC-11533-3] c 27 N87-24564
- Polyimides containing carbonyl and ether connecting groups [NASA-CASE-LAR-13833-1] c 27 N87-24575
- Aminophenoxycyclotriphosphazene cured epoxy resins and the composites, laminates, adhesives and structures thereof [NASA-CASE-ARC-11548-1] c 27 N87-25469
- Process for developing crystallinity in linear aromatic polyimides [NASA-CASE-LAR-13732-1] c 27 N87-25474
- Aromatic cyclotriphosphazenes [NASA-CASE-ARC-11428-3] c 23 N88-24692
- Substituted 1,1,1-Triaryl-2,2,2-Trifluoroethanes and processes for their synthesis [NASA-CASE-LEW-14345-1] c 23 N88-26404
- Boron-containing organosilane polymers and ceramic materials thereof [NASA-CASE-ARC-11649-1-SB] c 27 N88-29040
- Novel ladder polymers for use as high temperature stable resins or coatings [NASA-CASE-LEW-14203-1] c 27 N88-29984
- Polypyrrolylquinoxalines via aromatic nucleophilic displacement [NASA-CASE-LAR-13988-1] c 23 N89-11814
- Polybenzoxazines from aromatic diacetylenic diketones and diamines [NASA-CASE-LAR-13444-2-CU] c 23 N89-12667
- Low dielectric fluorinated poly(phenylene ether ketone) film and coating [NASA-CASE-LAR-13992-1-CU] c 23 N89-13496
- Polypyrrolylquinoxalines containing alkylendioxo groups [NASA-CASE-LAR-13601-1-CU] c 27 N89-14337
- Novel polyimide compositions based on 4,4'-isophthaloyldiphenyl anhydride (IDPA) [NASA-CASE-LAR-14194-1] c 24 N90-15148
- Wet spinning of solid polyamic acid fibers [NASA-CASE-LAR-14162-1] c 27 N90-15259
- Polyimides with carbonyl and ether connecting groups between the aromatic rings [NASA-CASE-LAR-14001-1] c 27 N90-15260
- Microporous structure with layered interstitial surface treatment, and method and apparatus for preparation thereof [NASA-CASE-MSC-21487-1] c 25 N90-16887
- Copolyimide with a combination of flexibilizing groups [NASA-CASE-LAR-13821-1] c 27 N90-16950
- New Condensation polyimides containing 1,1,1-triaryl-2,2,2-trifluoroethane structures [NASA-CASE-LEW-14346-1] c 23 N90-18300
- The 1-(diorganooxyphosphonyl)-methyl-2,4- and -2,6-diamino benzenes [NASA-CASE-ARC-11425-4] c 23 N90-20133
- Process for making a noble metal on tin oxide catalyst [NASA-CASE-LAR-13741-1-SB] c 25 N90-20180
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[NASA-CASE-MSC-13512-1] c 15 N72-22485
- Tetherline system for orbiting satellites  
[NASA-CASE-MFS-23584-1] c 15 N78-25119
- Non-backdrivable free wheeling coupling  
[NASA-CASE-MSC-20475-1] c 37 N87-17037

## TETRAETHYL ORTHOSILICATE

- Densification of porous refractory substrates — space shuttle orbiter tiles  
[NASA-CASE-MSC-18737-1] c 24 N83-13171  
Method of repairing surface damage to porous refractory substrates — space shuttle orbiter tiles  
[NASA-CASE-MSC-18736-1] c 24 N83-13172

## TETRAPHENYLS

- Metal containing polymers from cyclic tetrameric phenylphosphonitrimides Patent  
[NASA-CASE-HQN-10364] c 06 N71-27363

## TEXTILES

- Non-flammable elastomeric fiber from a fluorinated elastomer and containing an halogenated flame retardant  
[NASA-CASE-MSC-14331-1] c 27 N76-24405

## TEXTS

- Braille reading system  
[NASA-CASE-LAR-13306-1] c 82 N87-29372

## TEXTURES

- Modification of the electrical and optical properties of polymers — ion irradiation to create texture  
[NASA-CASE-LEW-13027-1] c 27 N80-24437  
Texturing polymer surfaces by transfer casting — cardiovascular prosthesis  
[NASA-CASE-LEW-13120-1] c 27 N82-28440  
Surface texturing of fluoropolymers  
[NASA-CASE-LEW-13028-1] c 27 N82-33521  
Ion sputter textured graphite — anode collector plates in electron tube devices  
[NASA-CASE-LEW-12919-1] c 24 N83-10117

## THERAPY

- Hyperthermia heating apparatus — cancer therapy  
[NASA-CASE-NPO-14549-2] c 52 N82-33996

## THERMAL ABSORPTION

- Constant temperature heat sink for calorimeters Patent  
[NASA-CASE-XMF-04208] c 33 N71-29051  
Solar pond  
[NASA-CASE-NPO-13581-2] c 44 N78-31525

## THERMAL ANALYSIS

- Thermal remote anemometer system  
[NASA-CASE-LAR-13508-1] c 35 N88-23862

## THERMAL COMFORT

- Thermal garment  
[NASA-CASE-XMS-03694-1] c 54 N82-29002

## THERMAL CONDUCTIVITY

- Enthalpy and stagnation temperature determination of a high temperature laminar flow gas stream Patent  
[NASA-CASE-XLE-00266] c 14 N70-34156  
Apparatus for measuring thermal conductivity Patent  
[NASA-CASE-XGS-01052] c 14 N71-15992  
Heated element fluid flow sensor Patent  
[NASA-CASE-MSC-12084-1] c 12 N71-17569  
Method and apparatus for varying thermal conductivity Patent  
[NASA-CASE-XNP-05524] c 33 N71-24876  
Thermally conductive polymers  
[NASA-CASE-GSC-11304-1] c 06 N72-21105  
Electrostatically controlled heat shutter  
[NASA-CASE-NPO-11942-1] c 33 N73-32818  
Thermal barrier coating system  
[NASA-CASE-LEW-12554-1] c 34 N78-18355  
Support assembly for cryogenically coolable low-noise choke waveguide  
[NASA-CASE-NPO-14253-1] c 32 N80-32605  
Automatic thermal switch — spacecraft applications  
[NASA-CASE-GSC-12553-1] c 34 N83-28356  
Hazards protection for space suits and spacecraft  
[NASA-CASE-MSC-21368-1] c 54 N89-12206

## THERMAL CONDUCTORS

- Thermal conductive connection and method of making same Patent  
[NASA-CASE-XMS-02087] c 09 N70-41717  
Solar energy absorber  
[NASA-CASE-MFS-22743-1] c 44 N76-22657

## THERMAL CONTROL COATINGS

- Thermal control coating Patent  
[NASA-CASE-XLA-01995] c 18 N71-23047  
Stabilized zinc oxide coating compositions Patent  
[NASA-CASE-XMF-07770-2] c 18 N71-26772  
Inorganic thermal control coatings  
[NASA-CASE-MFS-20011] c 18 N72-22566  
Polymeric vehicles as carriers for sulfonic acid salt of nitrosubstituted aromatic amines  
[NASA-CASE-ARC-10325] c 06 N72-25147  
Refractory porcelain enamel passive control coating for high temperature alloys  
[NASA-CASE-MFS-22324-1] c 27 N75-27160  
Particulate and solar radiation stable coating for spacecraft  
[NASA-CASE-LAR-10805-2] c 34 N77-18382  
Method of preparing zinc orthotitanate pigment  
[NASA-CASE-MFS-23345-1] c 27 N77-30237  
Intumescent coatings containing 4,4'-dinitrosulfanilide  
[NASA-CASE-ARC-11042-1] c 24 N78-14096

- Thermal barrier coating system  
[NASA-CASE-LEW-12554-1] c 34 N78-18355  
High temperature resistant cement and ceramic compositions — for thermal resistant insulators and refractory coatings  
[NASA-CASE-NPO-13690-1] c 27 N78-18302  
Intumescent-ablator coatings using endothermic fillers  
[NASA-CASE-ARC-11043-1] c 24 N78-27160  
Lightweight electrically-powered flexible thermal laminate — made of metal and nonconductive yarns  
[NASA-CASE-MSC-12662-1] c 33 N79-12331  
Electrically conductive thermal control coatings  
[NASA-CASE-GSC-12207-1] c 24 N79-14156  
High temperature glass thermal control structure and coating — for application to spacecraft reusable heat shielding  
[NASA-CASE-ARC-11164-1] c 44 N83-34448  
Variable anodic thermal control coating  
[NASA-CASE-LAR-12719-1] c 44 N83-34449

## THERMAL DEGRADATION

- Protection for energy conversion systems  
[NASA-CASE-XGS-04808] c 03 N69-25146  
Electrical apparatus for detection of thermal decomposition of insulation Patent  
[NASA-CASE-XMF-03968] c 14 N71-27186  
Boron-containing organosilane polymers and ceramic materials thereof  
[NASA-CASE-ARC-11649-2-SB] c 27 N90-21177

## THERMAL DIFFUSIVITY

- Double-beam optical method and apparatus for measuring thermal diffusivity and other molecular dynamic processes in utilizing the transient thermal lens effect  
[NASA-CASE-NPO-14657-1] c 74 N81-17887

## THERMAL EMISSION

- Electromagnetic radiation energy arrangement — coatings for solar energy absorption and infrared reflection  
[NASA-CASE-WOO-00428-1] c 32 N79-19186  
Continuous laminar smoke generator  
[NASA-CASE-LAR-13014-1] c 09 N85-21178  
Arc-textured high emittance radiator surfaces  
[NASA-CASE-LEW-14679-1] c 27 N89-28651

## THERMAL ENERGY

- Energy conversion apparatus Patent  
[NASA-CASE-XLE-00212] c 03 N70-34134  
Device for directionally controlling electromagnetic radiation Patent  
[NASA-CASE-XLE-01716] c 09 N70-40234  
Thermally activated foaming compositions Patent  
[NASA-CASE-LAR-10373-1] c 18 N71-26155  
Gas core nuclear reactor Patent  
[NASA-CASE-LEW-10250-1] c 22 N71-28759  
Electrostatically controlled heat shutter  
[NASA-CASE-NPO-11942-1] c 33 N73-32818  
Solid medium thermal engine  
[NASA-CASE-ARC-10481-1] c 44 N74-33379  
Panel for selectively absorbing solar thermal energy and the method of producing said panel  
[NASA-CASE-MFS-22562-1] c 44 N76-14595  
Thermal energy storage system — operating on superheating of liquids  
[NASA-CASE-MFS-23167-1] c 44 N76-31667  
Low to high temperature energy conversion system  
[NASA-CASE-NPO-13510-1] c 44 N77-32581  
Thermal energy transformer  
[NASA-CASE-NPO-14058-1] c 44 N79-18443  
Apparatus for improving the fuel efficiency of a gas turbine engine  
[NASA-CASE-LEW-13142-1] c 07 N83-36029  
Method for improving the fuel efficiency of a gas turbine engine  
[NASA-CASE-LEW-13142-2] c 07 N86-20389

## THERMAL EXPANSION

- Thermally operated valve Patent  
[NASA-CASE-XLE-00815] c 15 N70-35407  
Adjustable mount for a trihedral mirror Patent  
[NASA-CASE-XNP-08907] c 23 N71-29123  
Thermal motor  
[NASA-CASE-NPO-11283] c 09 N72-25260  
Glass-to-metal seals comprising relatively high expansion metals  
[NASA-CASE-LEW-10698-1] c 37 N74-21063  
Daze fasteners  
[NASA-CASE-LAR-13009-1] c 37 N85-29285  
High effectiveness contour matching contact heat exchanger  
[NASA-CASE-MSC-20840-1] c 34 N88-29132  
Seamless metal-clad fiber-reinforced organic matrix composite structures and process for their manufacture  
[NASA-CASE-LAR-13562-1] c 24 N90-25186

## THERMAL FATIGUE

- Automatic fatigue test temperature programmer Patent  
[NASA-CASE-XLA-02059] c 33 N71-24276

## THERMAL INSULATION

- Piping arrangement through a double chamber structure  
[NASA-CASE-XNP-08882] c 15 N69-39935  
Insulating structure Patent  
[NASA-CASE-XMF-00341] c 15 N70-33323  
Unfired-ceramic flame-resistant insulation and method of making the same Patent  
[NASA-CASE-XMF-01030] c 18 N70-41583  
Techniques for insulating cryogenic fuel containers Patent  
[NASA-CASE-XLA-01967] c 31 N70-42015  
Lightweight refractory insulation and method of preparing the same Patent  
[NASA-CASE-XMF-05279] c 18 N71-16124  
Heat protection apparatus Patent  
[NASA-CASE-XLA-00892] c 33 N71-17897  
Cryogenic insulation system Patent  
[NASA-CASE-XLE-04222] c 23 N71-22881  
Insulation system Patent  
[NASA-CASE-XLE-02647] c 18 N71-23658  
Filament wound container Patent  
[NASA-CASE-XLE-03803] c 15 N71-23816  
Panelized high performance multilayer insulation Patent  
[NASA-CASE-MFS-14023] c 33 N71-25351  
Isothermal cover with thermal reservoirs Patent  
[NASA-CASE-MFS-20355] c 33 N71-25353  
Fabric for micrometeoroid protection garment Patent  
[NASA-CASE-MSC-12109] c 18 N71-26285  
Thickness measuring and injection device Patent  
[NASA-CASE-MFS-20261] c 14 N71-27005  
Cryogenic thermal insulation Patent  
[NASA-CASE-XMF-05046] c 33 N71-28892  
Intumescent composition, foamed product prepared therewith, and process for making same  
[NASA-CASE-ARC-10304-1] c 18 N73-26572  
Thermal control system for a spacecraft modular housing  
[NASA-CASE-GSC-11018-1] c 31 N73-30829  
Heater-mixer for stored fluids  
[NASA-CASE-ARC-10442-1] c 35 N74-15093  
Intumescent composition, foamed product prepared therewith and process for making same  
[NASA-CASE-ARC-10304-2] c 27 N74-27037  
High current electrical lead — for thermionic converters  
[NASA-CASE-LEW-10950-1] c 33 N74-27683  
Structural heat pipe — for spacecraft wall thermal insulation system  
[NASA-CASE-GSC-11619-1] c 34 N75-12222  
Strain arrestor plate for fused silica tile — bonding of thermal insulation to metallic plates or structural parts  
[NASA-CASE-MSC-14182-1] c 27 N76-14264  
Auger attachment method for insulation — of spacecraft  
[NASA-CASE-MSC-12615-1] c 37 N76-19437  
Flexible pile thermal barrier insulator  
[NASA-CASE-MSC-19568-1] c 34 N78-25350  
Thermal insulation attaching means — adhesive bonding of felt vibration insulators under ceramic tiles  
[NASA-CASE-MSC-12619-2] c 27 N79-12221  
Fibrous refractory composite insulation — shielding reusable spacecraft  
[NASA-CASE-ARC-11169-1] c 24 N79-24062  
Thermal insulation protection means  
[NASA-CASE-MSC-12737-1] c 24 N79-25142  
Installing fiber insulation  
[NASA-CASE-MSC-16973-1] c 37 N81-14317  
Process for the preparation of polycarbonylphosphazenes — thermal insulation  
[NASA-CASE-ARC-11176-2] c 27 N81-27271  
Carbonylphosphazenes and their polymers — thermal insulation  
[NASA-CASE-ARC-11176-1] c 27 N82-18389  
A method and technique for installing light-weight fragile, high-temperature fiber insulation  
[NASA-CASE-MSC-18934-3] c 24 N82-26387  
Thermal garment  
[NASA-CASE-XMS-03694-1] c 54 N82-29002  
Method and technique for installing light-weight, fragile, high-temperature fiber insulation  
[NASA-CASE-MSC-16934-3] c 24 N84-16262  
Insulation bonding test system  
[NASA-CASE-MFS-25862-1] c 27 N85-20126  
Cryogenic insulation strength and bond tester  
[NASA-CASE-MFS-25910-1] c 39 N86-20841  
Ceramic-ceramic shell tile thermal protection system and method thereof  
[NASA-CASE-ARC-11641-1] c 24 N88-18628  
Lightweight ceramic insulation and method  
[NASA-CASE-MSC-20782-1] c 27 N90-23566

## THERMAL MAPPING

- Noncontact temperature pattern measuring device  
[NASA-CASE-NPO-17024-1-CU] c 35 N88-24943

## THERMAL PLASMAS

Continuous plasma light source  
[NASA-CASE-XNP-04187-2] c 25 N72-24753

## THERMAL PROTECTION

Thermo-protective device for balances Patent  
[NASA-CASE-XAC-00648] c 14 N70-40400

Ablation structures Patent  
[NASA-CASE-XMS-01816] c 33 N71-15623

Spacecraft radiator cover Patent  
[NASA-CASE-MSC-12049] c 31 N71-16080

Foamed in place ceramic refractory insulating material Patent  
[NASA-CASE-XGS-02435] c 18 N71-22998

Ceramic insulation for radiant heating environments and method of preparing the same Patent  
[NASA-CASE-MFS-14253] c 33 N71-24858

Solid state thermal control polymer coating Patent  
[NASA-CASE-XLA-01745] c 33 N71-28903

Temperature reducing coating for metals subject to flame exposure Patent  
[NASA-CASE-XLE-00035] c 33 N71-29151

Stand-off type ablative heat shield  
[NASA-CASE-MSC-12143-1] c 33 N72-17947

Flexible fire retardant polysiocyanate modified neoprene foam — for thermal protective devices  
[NASA-CASE-ARC-10180-1] c 27 N74-12814

Adjustable securing base  
[NASA-CASE-MSC-19668-1] c 37 N78-17383

Reaction cured glass and glass coatings  
[NASA-CASE-ARC-11051-1] c 27 N78-32260

Corrosion resistant thermal barrier coating — protecting gas turbines and other engine parts  
[NASA-CASE-LEW-13088-1] c 26 N81-25188

Attachment system for silica tiles — thermal protection for space shuttle orbiter  
[NASA-CASE-MSC-18741-1] c 27 N82-29456

Multilayer thermal protection system  
[NASA-CASE-LAR-12620-1] c 24 N82-32417

High temperature silicon carbide impregnated insulating fabrics  
[NASA-CASE-MSC-18832-1] c 27 N83-18908

Silicon-slurry/aluminide coating — protecting gas turbine engine vanes and blades  
[NASA-CASE-LEW-13343] c 26 N83-31795

Thermal barrier coating system having improved adhesion  
[NASA-CASE-LEW-1335901] c 27 N83-31855

Covering solid, film coated surfaces with a duplex thermal barrier coating  
[NASA-CASE-LEW-13450-1] c 31 N83-35177

Pre-stressed thermal protection systems  
[NASA-CASE-MSC-20254-1] c 18 N84-22601

Shell tile thermal protection system  
[NASA-CASE-LAR-12862-1] c 27 N84-27886

Propulsion apparatus and method using boil-off gas from a cryogenic liquid  
[NASA-CASE-MFS-25946-1] c 20 N86-26388

Process for preparing essentially colorless polyimide film containing phenoxy-linked diamines  
[NASA-CASE-LAR-13353-1] c 27 N86-29039

Process for preparing highly optically transparent/colorless aromatic polyimide film  
[NASA-CASE-LAR-13351-1] c 27 N86-31727

Thermal stress minimized, two component, turbine shroud seal  
[NASA-CASE-LEW-14212-1] c 37 N88-23978

Polycarbonate article with chemical resistant coating  
[NASA-CASE-MSC-21503-1] c 27 N90-16925

Thermal switch disc for short circuit protection of batteries  
[NASA-CASE-MSC-21428-1] c 33 N90-17008

## THERMAL RADIATION

Compensating radiometer  
[NASA-CASE-XLA-04556] c 14 N69-27484

Temperature sensitive capacitor device  
[NASA-CASE-XNP-09750] c 14 N69-39937

High temperature heat source Patent  
[NASA-CASE-XLE-00490] c 33 N70-34545

Thermal radiation shielding Patent  
[NASA-CASE-XLE-03432] c 33 N71-24145

Cavity radiometer Patent  
[NASA-CASE-XNP-08961] c 14 N71-24809

Method and construction for protecting heat sensitive bodies from thermal radiation and convective heat Patent  
[NASA-CASE-XNP-01310] c 33 N71-28852

Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NAS 1.71:NPO-15494-2] c 35 N85-34373

## THERMAL REACTORS

Non-equilibrium radiation nuclear reactor  
[NASA-CASE-HQN-10841-1] c 73 N78-19920

## THERMAL RESISTANCE

Diode and protection fuse unit Patent  
[NASA-CASE-XKS-03381] c 09 N71-22796

Polyimide foam for the thermal insulation and fire protection  
[NASA-CASE-ARC-10484-1] c 27 N74-12812

Dual measurement ablation sensor  
[NASA-CASE-LAR-10105-1] c 34 N74-15652

Self-regulating proportionally controlled heating apparatus and technique  
[NASA-CASE-GSC-11752-1] c 77 N75-20140

Heat resistant polymers of oxidized styrylphosphine  
[NASA-CASE-MSC-14903-1] c 27 N78-32256

Ambient cure polyimide foams — thermal resistant foams  
[NASA-CASE-ARC-11170-1] c 27 N79-11215

The 1,2,4-oxadiazole elastomers — heat resistant polymers  
[NASA-CASE-ARC-11253-1] c 27 N81-17262

Surface conforming thermal/pressure seal — tail assemblies of space shuttle orbiters  
[NASA-CASE-MSC-18422-1] c 37 N82-18408

Heat resistant protective hand covering  
[NASA-CASE-MSC-20261-2] c 54 N84-23113

Heat resistant protective hand covering  
[NASA-CASE-MSC-20261-1] c 54 N84-28484

Thermal barrier coating system  
[NASA-CASE-LEW-13324-2] c 24 N85-21266

High temperature polyimide film laminates and process for preparation thereof  
[NASA-CASE-LAR-13384-1] c 27 N86-20561

Fire resistant polyamide based on 1-(diorganooxyphosphoryl)methyl-2,4- and -2,6-diaminobenzene  
[NASA-CASE-ARC-11512-2] c 27 N86-32568

Fire and heat resistant laminating resins based on maleimide substituted aromatic cyclotriphosphazene polymer  
[NASA-CASE-ARC-11428-2] c 27 N87-16909

Fire and heat resistant laminating resins based on maleimide and citraconimide substituted 1-2,4- and -2,6-diaminobenzenes  
[NASA-CASE-ARC-11533-1] c 27 N87-23751

Method of making a flexible diaphragm  
[NASA-CASE-MSC-20797-1] c 37 N87-23981

Fire and heat resistant laminating resins based on maleimide and citraconimide substituted 1-(diorgano oxyphosphoryl) methyl -2,4- and -2,6- diaminobenzenes  
[NASA-CASE-ARC-11533-3] c 27 N87-24564

Fire and heat resistant laminating resin based on maleimide and citraconimide substituted 1-(diorganooxyphosphoryl-methyl)-2,4- and -2,6-diaminobenzenes  
[NASA-CASE-ARC-11533-2] c 27 N89-18042

## THERMAL SHOCK

Thermal shock apparatus Patent  
[NASA-CASE-XLE-02024] c 14 N71-22964

Thermal shock resistant hafnia ceramic material  
[NASA-CASE-LAR-10894-1] c 18 N73-14584

Thermal shock and erosion resistant tantalum carbide ceramic material  
[NASA-CASE-LAR-11902-1] c 27 N78-17206

Laser surface fusion of plasma sprayed ceramic turbine seals  
[NASA-CASE-LEW-13269-1] c 18 N83-20996

## THERMAL SIMULATION

Thermopile vacuum gage tube simulator Patent  
[NASA-CASE-XLA-02758] c 14 N71-18481

## THERMAL STABILITY

Bonded solid lubricant coating Patent  
[NASA-CASE-XMS-00259] c 18 N70-38400

Portable environmental control system Patent  
[NASA-CASE-XMS-09632-1] c 05 N71-11203

Metal containing polymers from cyclic tetrameric phenylphosphorotriamides Patent  
[NASA-CASE-HQN-10384] c 06 N71-27383

Method of making a cermet Patent  
[NASA-CASE-LEW-10219-1] c 18 N71-28729

Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-1] c 27 N74-21156

Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-2] c 27 N76-32315

Sound-suppressing structure with thermal relief  
[NASA-CASE-LEW-12658-1] c 71 N79-14871

Infusible silazane polymer and process for producing same — protective coatings  
[NASA-CASE-XMF-02526-1] c 27 N79-21190

Catalytic trimerization of aromatic nitriles and triaryl-s-triazine ring cross-linked high temperature resistant polymers and copolymers made thereby  
[NASA-CASE-LEW-12053-2] c 27 N79-28307

Aluminum ion-containing polyimide adhesives  
[NASA-CASE-LAR-12640-1] c 27 N82-11206

Low temperature cross linking polyimides  
[NASA-CASE-LEW-12876-2] c 27 N83-29392

Metal phthalocyanine polymers  
[NASA-CASE-ARC-11405-1] c 27 N84-27884

High temperature resistant polyimide from tetra ester, diamine, diester and N-arylnadimide  
[NASA-CASE-LEW-13864-1] c 27 N86-19457

Ethynyl and substituted ethynyl-terminated polysulfones  
[NASA-CASE-LAR-12931-2] c 27 N86-21675

Sulfone-ester polymers containing pendent ethynyl groups  
[NASA-CASE-LAR-13316-1] c 27 N86-27450

## THERMAL STRESSES

Strain gage Patent Application  
[NASA-CASE-FRC-10053] c 14 N70-35587

Multilegged support system Patent  
[NASA-CASE-XLA-01326] c 11 N71-21481

Low cycle fatigue testing machine  
[NASA-CASE-LAR-10270-1] c 32 N72-25877

Apparatus and method for reducing thermal stress in a turbine rotor  
[NASA-CASE-LEW-12232-1] c 07 N79-10057

Method for alleviating thermal stress damage in laminates — metal matrix composites  
[NASA-CASE-LEW-12493-1] c 24 N81-17170

Method for alleviating thermal stress damage in laminates  
[NASA-CASE-LEW-12493-2] c 24 N81-26179

Fully plasma-sprayed compliant backed ceramic turbine seal  
[NASA-CASE-LEW-13268-2] c 37 N82-26874

Daze fasteners  
[NASA-CASE-LAR-13009-1] c 37 N85-29285

Thermal stress minimized, two component, turbine shroud seal  
[NASA-CASE-LEW-14212-1] c 37 N88-23978

## THERMIONIC CATHODES

Cavity emitter for thermionic converter Patent  
[NASA-CASE-NPO-10412] c 09 N71-28421

## THERMIONIC CONVERTERS

Triode thermionic energy converter  
[NASA-CASE-XLE-01015] c 03 N69-39898

Thermionic converter with current augmented by self induced magnetic field Patent  
[NASA-CASE-XLE-01803] c 22 N71-23599

Cavity emitter for thermionic converter Patent  
[NASA-CASE-NPO-10412] c 09 N71-28421

Solar cell Patent  
[NASA-CASE-ARC-10050] c 03 N71-33409

Uninsulated in-core thermionic diode  
[NASA-CASE-NPO-10542] c 09 N72-27228

High current electrical lead — for thermionic converters  
[NASA-CASE-LEW-10950-1] c 33 N74-27683

Electric power generation system directory from laser power  
[NASA-CASE-NPO-13308-1] c 36 N75-30524

Nuclear thermionic converter — tungsten-thorium oxide rods  
[NASA-CASE-NPO-13121-1] c 73 N77-18891

High thermal power density heat transfer — thermionic converters  
[NASA-CASE-LEW-12950-1] c 34 N82-11399

Thermionic energy converters  
[NASA-CASE-LEW-12443-1] c 44 N83-32175

## THERMIONIC DIODES

Heat pipe thermionic diode power system Patent  
[NASA-CASE-XMF-05843] c 03 N71-11055

Thermionic diode switch Patent  
[NASA-CASE-NPO-10404] c 03 N71-12255

Micro current measuring device using plural logarithmic response heated filamentary type diodes Patent  
[NASA-CASE-XNP-00384] c 09 N71-13530

Power system with heat pipe liquid coolant lines Patent  
[NASA-CASE-MFS-14114] c 33 N71-27862

Uninsulated in-core thermionic diode  
[NASA-CASE-NPO-10542] c 09 N72-27228

## THERMIONIC EMITTERS

Thermionic tantalum emitter doped with oxygen Patent Application  
[NASA-CASE-NPO-11138] c 03 N70-34646

## THERMIONIC POWER GENERATION

Control for nuclear thermionic power source  
[NASA-CASE-NPO-13114-2] c 73 N78-28913

High thermal power density heat transfer apparatus providing electrical isolation at high temperature using heat pipes  
[NASA-CASE-LEW-12950-2] c 34 N85-29179

Thermionic photovoltaic energy converter  
[NASA-CASE-LEW-14077-1] c 44 N85-34441

## THERMISTORS

Matched thermistors for microwave power meters Patent  
[NASA-CASE-NPO-10348] c 10 N71-12554

Thermistor holder for skin temperature measurements  
[NASA-CASE-ARC-10855-1] c 52 N77-10780

Wedge immersed thermistor bolometers  
[NASA-CASE-XGS-01245-1] c 35 N79-33449

## THERMOCHEMISTRY

Thermochemical generation of hydrogen  
[NASA-CASE-NPO-15015-1] c 25 N82-28368

## THERMOCHROMATIC MATERIALS

Heat detection and compositions and devices therefor  
[NASA-CASE-NPO-10764-1] c 14 N73-14428  
Heat detection and compositions and devices therefor  
[NASA-CASE-NPO-10764-2] c 35 N75-25122

## THERMOCOUPLE PYROMETERS

Dual measurement ablation sensor  
[NASA-CASE-LAR-10105-1] c 34 N74-15652

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[NASA-CASE-NPO-17439-1-CU] c 52 N90-16391

Method and apparatus for applying a mechanical force to surface  
[NASA-CASE-LAR-14009-1] c 37 N90-27115

**TRANSFER FUNCTIONS**  
Method and apparatus for transfer function simulator for testing complex systems  
[NASA-CASE-NPO-15696-1] c 33 N85-34333

**TRANSFORMERS**  
Signal multiplexer  
[NASA-CASE-XGS-01110] c 07 N69-24334

Insertion loss measuring apparatus having transformer means connected across a pair of bolometers Patent  
[NASA-CASE-XNP-01183] c 10 N71-16057

Saturation current protection apparatus for saturable core transformers Patent  
[NASA-CASE-ERC-10075] c 09 N71-24800

Unsaturating saturable core transformer Patent  
[NASA-CASE-ERC-10125] c 09 N71-24883

Electronically resettable fuse Patent  
[NASA-CASE-XGS-11177] c 09 N71-27001

Voltage regulator Patent  
[NASA-CASE-ERC-10113] c 09 N71-27053

Radial heat flux transformer  
[NASA-CASE-NPO-10828] c 33 N72-17948

Saturation current protection apparatus for saturable core transformers  
[NASA-CASE-ERC-10075-2] c 09 N72-22196

Fallsafe multiple transformer circuit configuration  
[NASA-CASE-NPO-11078] c 09 N72-25262

Banded transformer cores  
[NASA-CASE-NPO-11966-1] c 33 N74-17928

Solid-state current transformer  
[NASA-CASE-MFS-22560-1] c 33 N77-14335

Transformer regulated self-stabilizing chopper  
[NASA-CASE-XGS-09186] c 33 N78-17295

Apparatus including a plurality of spaced transformers for locating short circuits in cables  
[NASA-CASE-KSC-10899-1] c 33 N79-18183

Circuit for automatic load sharing in parallel converter modules  
[NASA-CASE-NPO-14056-1] c 33 N79-24257

System for automatically switching transformer coupled lines  
[NASA-CASE-MSC-16697-1] c 33 N79-28415

Three phase power factor controller  
[NASA-CASE-MFS-25535-1] c 33 N81-12330

Base drive for paralleled inverter systems  
[NASA-CASE-NPO-14163-1] c 33 N81-14220

Low current linearization of magnetic amplifier for dc transducer  
[NASA-CASE-NPO-14617-1] c 33 N81-24338

Push-pull converter with energy saving circuit for protecting switching transistors from peak power stress  
[NASA-CASE-NPO-14316-1] c 33 N81-33404

Non-contacting power transfer device  
[NASA-CASE-GSC-12595-1] c 33 N82-24422

High voltage isolation transformer  
[NASA-CASE-GSC-12817-1] c 33 N85-29146

**TRANSIENT HEATING**  
Thermocouple installation  
[NASA-CASE-NPO-13540-1] c 35 N77-14409

Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NASA-CASE-NPO-15494-1] c 35 N82-25484

Instrumentation for sensing moisture content of material using a transient thermal pulse  
[NAS 1.71-NPO-15494-2] c 35 N85-34373

**TRANSIENT LOADS**  
Deployable solar cell array  
[NASA-CASE-NPO-10883] c 31 N72-22874

**TRANSISTOR AMPLIFIERS**  
Apparatus for overcurrent protection of a push-pull amplifier Patent  
[NASA-CASE-MSC-12033-1] c 09 N71-13531

**TRANSISTOR CIRCUITS**  
Low power drain semi-conductor circuit  
[NASA-CASE-XGS-04999] c 09 N69-24317

Ring counter  
[NASA-CASE-XGS-03095] c 09 N69-27463

Pulse counting circuit which simultaneously indicates the occurrence of the nth pulse Patent  
[NASA-CASE-XMF-00906] c 09 N70-41655

Linear sawtooth voltage-wave generator employing transistor timing circuit having capacitor-zener diode combination feedback Patent  
[NASA-CASE-XMS-01315] c 09 N70-41675

Switching circuit employing regeneratively connected complementary transistors Patent  
[NASA-CASE-XNP-02654] c 10 N70-42032

High voltage transistor circuit Patent  
[NASA-CASE-XNP-06837] c 09 N71-19518

Complementary regenerative switch Patent  
[NASA-CASE-XGS-02751] c 09 N71-23015

Transistor drive regulator Patent  
[NASA-CASE-LEW-10233] c 10 N71-27126

Multiple slope sweep generator Patent  
[NASA-CASE-XMS-03542] c 09 N71-28926

Broadband video process with very high input impedance  
[NASA-CASE-NPO-10199] c 09 N72-17156

Ultra-stable oscillator with complementary transistors  
[NASA-CASE-GSC-11513-1] c 33 N74-20862

Inrush current limiter  
[NASA-CASE-GSC-11789-1] c 33 N77-14333

Temperature compensated current source  
[NASA-CASE-MSC-11235] c 33 N78-17294

Push-pull converter with energy saving circuit for protecting switching transistors from peak power stress  
[NASA-CASE-NPO-14316-1] c 33 N81-33404

Power converter  
[NASA-CASE-FRC-11014-1] c 33 N82-18494

**TRANSISTORS**  
Power supply circuit Patent  
[NASA-CASE-XMS-00913] c 10 N71-23543

Switching circuit Patent  
[NASA-CASE-XNP-06505] c 10 N71-24799

Cascaded complementary pair broadband transistor amplifiers Patent  
[NASA-CASE-NPO-10003] c 10 N71-26415

Fast response low power drain logic circuits  
[NASA-CASE-GSC-10878-1] c 10 N72-22236

Coaxial inverted geometry transistor having buried emitter  
[NASA-CASE-ARC-10330-1] c 09 N73-32112

Four phase logic systems — including integrated microcircuits  
[NASA-CASE-MSC-14240-1] c 33 N75-14957

Complementary DMOS-VMOS integrated circuit structure  
[NASA-CASE-GSC-12190-1] c 33 N79-12321

Circuit for automatic load sharing in parallel converter modules  
[NASA-CASE-NPO-14056-1] c 33 N79-24257

Base drive for paralleled inverter systems  
[NASA-CASE-NPO-14163-1] c 33 N81-14220

Four quadrant control circuit for a brushless three-phase dc motor  
[NASA-CASE-MFS-28080-1] c 33 N87-21233

**TRANSITION FLOW**  
Ablation article and method  
[NASA-CASE-LAR-10439-1] c 33 N73-27796

**TRANSITION TEMPERATURE**  
Process for preparing thermoplastic aromatic polyimides  
[NASA-CASE-LAR-11828-1] c 27 N78-32261

Method of producing high T(subc) superconducting NBN films  
[NASA-CASE-NPO-16681-1-CU] c 76 N88-24543

**TRANSITIONAL MOTION**  
Centrifuge mounted motion simulator Patent  
[NASA-CASE-XAC-00399] c 11 N70-34815

Translating horizontal tail Patent  
[NASA-CASE-XLA-08801-1] c 02 N71-11043

Semi-linear ball bearing Patent  
[NASA-CASE-XLA-02809] c 15 N71-22982

Positioning mechanism  
[NASA-CASE-NPO-10679] c 15 N72-21462

Improved docking alignment system  
[NASA-CASE-MSC-21372-1] c 35 N89-12842

Suspension mechanism and method  
[NASA-CASE-LAR-14142-1] c 37 N90-27116

**TRANSLATORS**  
Serial data correlator/code translator  
[NASA-CASE-KSC-11025-1] c 32 N83-13323

**TRANSLUCENCE**  
Light transmitting window assembly  
[NASA-CASE-MSC-18417-1] c 74 N85-29750

**TRANSMISSION CIRCUITS**  
Beam forming network  
[NASA-CASE-NPO-15743-1] c 32 N85-29118

**TRANSMISSION EFFICIENCY**  
Microwave power transmission system wherein level of transmitted power is controlled by reflections from receiver  
[NASA-CASE-MFS-21470-1] c 44 N74-19870

Linear phase demodulator including a phase locked loop with auxiliary feedback loop  
[NASA-CASE-GSC-12018-1] c 33 N77-14334

Apparatus and method for characterizing the transmission efficiency of a mass spectrometer  
[NASA-CASE-NPO-16989-1-CU] c 35 N89-28794

**TRANSMISSION LINES**  
Validation device for spacecraft checkout equipment Patent  
[NASA-CASE-XKS-10543] c 07 N71-26292

Collapsible antenna boom and transmission line Patent  
[NASA-CASE-MFS-20068] c 07 N71-27191

Phase modulator Patent  
[NASA-CASE-MSC-13201-1] c 07 N71-28429

Shielded flat cable  
[NASA-CASE-MFS-13687-2] c 09 N72-22198

Phase control circuits using frequency multiplications for phased array antennas  
[NASA-CASE-ERC-10285] c 10 N73-16206

Phase protection system for ac power lines  
[NASA-CASE-MSC-17832-1] c 33 N74-14956

System for stabilizing cable phase delay utilizing a coaxial cable under pressure  
[NASA-CASE-NPO-13138-1] c 33 N74-17927

Telephone multiline signaling using common signal pair  
[NASA-CASE-KSC-11023-1] c 32 N79-23310

System for automatically switching transformer coupled lines  
[NASA-CASE-MSC-16697-1] c 33 N79-28415

**TRANSMISSION LOSS**  
Low-loss, high-isolation, fiber-optic isolator  
[NASA-CASE-NPO-17207-1-CU] c 74 N88-25304

**TRANSMISSIONS (MACHINE ELEMENTS)**  
Compensating linkage for main rotor control  
[NASA-CASE-LAR-11797-1] c 05 N81-19087

Directional gear ratio transmissions  
[NASA-CASE-LAR-12644-1] c 37 N84-28084

Magnetic drive coupling  
[NASA-CASE-MSC-21171-1] c 37 N88-23973

**TRANSMISSIVITY**  
Process of making medical clip  
[NASA-CASE-LAR-12650-1] c 52 N84-28389

**TRANSMITTANCE**  
Light transmitting window assembly  
[NASA-CASE-MSC-18417-1] c 74 N85-29750

**TRANSMITTER RECEIVERS**  
Integrated thermoelectric generator/space antenna combination  
[NASA-CASE-XER-09521] c 09 N72-12136

Location identification system  
[NASA-CASE-ERC-10324] c 07 N72-25173

Automatic vehicle location system  
[NASA-CASE-NPO-11850-1] c 32 N74-12912

Digital communication system  
[NASA-CASE-MSC-13912-1] c 32 N74-30524

**TRANSMITTERS**  
Temperature telemetric transmitter Patent  
[NASA-CASE-NPO-10649] c 07 N71-24840

Two carrier communication system with single transmitter  
[NASA-CASE-NPO-11548] c 07 N73-26118

Miniature multichannel biotelemetry system  
[NASA-CASE-NPO-13065-1] c 52 N74-26625

- Digital transmitter for data bus communications system  
[NASA-CASE-MSC-14558-1] c 32 N75-21486
- Apparatus for endoscopic examination — analysis of the propulsion system configuration and transmitter  
[NASA-CASE-NPO-14092-1] c 52 N80-16725
- Single frequency multitransmitter telemetry  
[NASA-CASE-LAR-13006-1] c 17 N87-16863
- TRANSONIC SPEED**  
Leading edge curvature based on convective heating Patent  
[NASA-CASE-XLA-01486] c 01 N71-23497
- TRANSONIC WIND TUNNELS**  
Wind tunnel test section  
[NASA-CASE-MFS-20509] c 11 N72-17183
- Miniature remote dead weight calibrator  
[NASA-CASE-LAR-13564-1] c 35 N87-25558
- TRANSPARENCE**  
Helmet assembly and latch means therefor Patent  
[NASA-CASE-XMS-04935] c 05 N71-11190
- Method and apparatus for producing an image from a transparent object  
[NASA-CASE-GSC-11989-1] c 74 N77-28932
- Method of fabricating a photovoltaic module of a substantially transparent construction  
[NASA-CASE-NPO-14303-1] c 44 N80-18550
- Light transmitting window assembly  
[NASA-CASE-MSC-18417-1] c 74 N85-29750
- Process for preparing essentially colorless polyimide film containing phenoxy-linked diamines  
[NASA-CASE-LAR-13353-1] c 27 N86-29039
- Process for preparing highly optically transparent/colorless aromatic polyimide film  
[NASA-CASE-LAR-13351-1] c 27 N86-31727
- Procedure to prepare transparent silica gels  
[NASA-CASE-LAR-13476-1-CU] c 76 N87-29360
- Method for investigating the formation of crystals in a transparent material  
[NASA-CASE-MFS-26008-1-CU] c 76 N88-14835
- TRANSPIRATION**  
Rocket chamber and method of making  
[NASA-CASE-LEW-11118-2] c 20 N76-14191
- TRANSPONDERS**  
Dynamic Doppler simulator Patent  
[NASA-CASE-XMS-05454-1] c 07 N71-12391
- Method and apparatus for mapping planets  
[NASA-CASE-NPO-11001] c 07 N72-21118
- Code regenerative clean-up loop transponder for a mu-type ranging system  
[NASA-CASE-NPO-11707] c 07 N73-25161
- Automatic vehicle location system  
[NASA-CASE-NPO-11850-1] c 32 N74-12912
- Simultaneous acquisition of tracking data from two stations  
[NASA-CASE-NPO-13292-1] c 32 N75-15854
- Automatic transponder — measurement of the internal delay time of a transponder  
[NASA-CASE-GSC-12075-1] c 32 N77-31350
- Video processor for air traffic control beacon system  
[NASA-CASE-KSC-11155-1] c 04 N86-19304
- TRANSPORT VEHICLES**  
Bidirectional drive and brake mechanism  
[NASA-CASE-MSC-21540-1] c 37 N90-26342
- TRANSPORTATION**  
Supporting and protecting device Patent  
[NASA-CASE-XMF-00580] c 11 N70-35383
- Shuttle car loading system  
[NASA-CASE-NPO-15949-1] c 85 N85-34722
- TRANSVERSE ACCELERATION**  
Rim inertial measuring system  
[NASA-CASE-LAR-12052-1] c 18 N81-29152
- TRAPPED PARTICLES**  
Method and apparatus for determining time, direction and composition of impacting space particles  
[NASA-CASE-LAR-13392-1-CU] c 19 N90-10132
- TRAPS**  
Deep trap, laser activated image converting system  
[NASA-CASE-NPO-13131-1] c 36 N75-19652
- TRAVELING WAVE AMPLIFIERS**  
Serrordyne frequency converter re-entrant amplifier system Patent  
[NASA-CASE-XGS-01022] c 07 N71-16088
- Traveling wave solid state amplifier utilizing a semiconductor with negative differential mobility  
[NASA-CASE-HQN-10069] c 33 N75-27251
- Resonant isolator for maser amplifier  
[NASA-CASE-NPO-15201-1] c 36 N83-35350
- Ladder supported ring bar circuit  
[NASA-CASE-LEW-13570-1] c 33 N84-16452
- TRAVELING WAVE MASERS**  
Folded traveling wave maser structure Patent  
[NASA-CASE-XNP-05219] c 16 N71-15550
- High-gain, broadband traveling wave maser Patent  
[NASA-CASE-NPO-10548] c 16 N71-24831
- Independent gain and bandwidth control of a traveling wave maser  
[NASA-CASE-NPO-13801-1] c 36 N78-18410
- TRAVELING WAVE TUBES**  
Segmented superconducting magnet for a broadband traveling wave maser Patent  
[NASA-CASE-XGS-10518] c 16 N71-28554
- Traveling wave tube circuit  
[NASA-CASE-LEW-12013-1] c 33 N79-10339
- Multistage depressed collector for dual mode operation — for microwave transmitting tubes  
[NASA-CASE-LEW-13282-1] c 33 N82-24415
- Linearized traveling wave amplifier with hard limiter characteristics  
[NASA-CASE-LEW-13981-2] c 33 N86-21742
- Miniature traveling wave tube and method of making  
[NASA-CASE-LEW-14520-1] c 33 N90-22724
- TRAVELING WAVES**  
Maser for frequencies in the 7-20 GHz range  
[NASA-CASE-NPO-11437] c 16 N72-28521
- TREADMILLS**  
Tread drum for animals — having an electrical shock station  
[NASA-CASE-ARC-10917-1] c 51 N78-27733
- TREADS**  
Tank tread assemblies with track-linking mechanism  
[NASA-CASE-NPO-16321-1CU] c 37 N87-17034
- TRIGGER CIRCUITS**  
Ring counter  
[NASA-CASE-XGS-03095] c 09 N69-27463
- Electric arc driven wind tunnel Patent  
[NASA-CASE-XMF-00411] c 11 N70-36913
- Automatic signal range selector for metering devices Patent  
[NASA-CASE-XMS-06497] c 14 N71-26244
- Multivibrator circuit with means to prevent false triggering from supply voltage fluctuations Patent  
[NASA-CASE-ARC-10137-1] c 09 N71-28468
- SCR lamp driver  
[NASA-CASE-GSC-10221-1] c 09 N72-23171
- Rapidly pulsed, high intensity, incoherent light source  
[NASA-CASE-XLE-2520-3] c 33 N74-20859
- Pulsed thyristor trigger control circuit  
[NASA-CASE-MFS-25618-1] c 33 N84-16455
- TRIGONOMETRY**  
Trigonometric vehicle guidance assembly which aligns the three perpendicular axes of two three-axes systems Patent  
[NASA-CASE-XMF-00684] c 21 N71-21688
- TRIMERS**  
Trifunctional alcohol  
[NASA-CASE-NPO-10714] c 06 N69-31244
- Trimerization of aromatic nitriles  
[NASA-CASE-LEW-12053-1] c 27 N78-15276
- Catalytic trimerization of aromatic nitriles and triaryl-*s*-triazine ring cross-linked high temperature resistant polymers and copolymers made thereby  
[NASA-CASE-LEW-12053-2] c 27 N79-28307
- TRIODES**  
Triode thermionic energy converter  
[NASA-CASE-XLE-01015] c 03 N69-39898
- Textured carbon surfaces on copper by sputtering  
[NASA-CASE-LEW-14130-1] c 31 N86-32587
- TRITIUM**  
Method for determining the state of charge of batteries by the use of tracers Patent  
[NASA-CASE-XNP-01464] c 03 N71-10728
- TROPOPAUSE**  
CAT altitude avoidance system  
[NASA-CASE-NPO-15351-1] c 06 N83-10040
- TRUCKS**  
Fifth wheel  
[NASA-CASE-FRC-10081-1] c 37 N77-14477
- Low-drag ground vehicle particularly suited for use in safely transporting livestock  
[NASA-CASE-FRC-11058-1] c 85 N82-33288
- TRUSSES**  
Low mass truss structure  
[NASA-CASE-LAR-10546-1] c 11 N72-25287
- Lightweight structural columns — space erectable trusses  
[NASA-CASE-LAR-12095-1] c 31 N81-25258
- Structural members, method and apparatus  
[NASA-CASE-MSC-16217-1] c 31 N81-27323
- Sequentially deployable maneuverable tetrahedral beam  
[NASA-CASE-LAR-13098-1] c 31 N86-19479
- Shuttle-launch triangular space station  
[NASA-CASE-MSC-20676-1] c 18 N86-24729
- Synchronously deployable truss structure  
[NASA-CASE-LAR-13117-1] c 37 N88-25789
- Deployable M-braced truss structure  
[NASA-CASE-LAR-13081-1] c 37 N86-32737
- Synchronously deployable double fold beam and planar truss structure  
[NASA-CASE-LAR-13490-1] c 18 N87-14413
- Deployable geodesic truss structure  
[NASA-CASE-LAR-13113-1] c 31 N87-25492
- Preloaded space structural coupling joints  
[NASA-CASE-LAR-13489-1] c 18 N87-27713
- Mobile remote manipulator system for a tetrahedral truss  
[NASA-CASE-MSC-20985-1] c 18 N88-26398
- Collet lock joint for space station truss  
[NASA-CASE-MSC-21207-1] c 37 N88-29180
- Clevis joint for deployable space structures  
[NASA-CASE-LAR-13898-1] c 37 N88-30130
- Overcenter collet space station truss fastener  
[NASA-CASE-MSC-21504-1] c 18 N90-26859
- Quick connect coupling  
[NASA-CASE-MSC-21539-1] c 37 N90-27111
- TUBE GRIDS**  
Method for fabricating solar cells having integrated collector grids  
[NASA-CASE-LEW-12819-2] c 44 N79-18444
- TUBE HEAT EXCHANGERS**  
Electrothermal rockets having improved heat exchangers Patent  
[NASA-CASE-XLE-01783] c 28 N70-34175
- Procedure and apparatus for determination of water in nitrogen tetroxide  
[NASA-CASE-NPO-10234] c 06 N72-17094
- Liquid cooled brassiere and method of diagnosing malignant tumors therewith  
[NASA-CASE-ARC-11007-1] c 52 N77-14736
- Solar energy receiver for a Stirling engine  
[NASA-CASE-NPO-14619-1] c 44 N81-17518
- TUBES**  
Method of making tubes Patent  
[NASA-CASE-XGS-04175] c 15 N71-18579
- Tube sealing device Patent  
[NASA-CASE-NPO-10431] c 15 N71-29132
- TUMBLING MOTION**  
Tumbler system to provide random motion  
[NASA-CASE-XGS-02437] c 15 N69-21472
- TUMORS**  
Liquid cooled brassiere and method of diagnosing malignant tumors therewith  
[NASA-CASE-ARC-11007-1] c 52 N77-14736
- TUNABLE LASERS**  
Spectrophone stabilized laser with line center offset frequency control  
[NASA-CASE-NPO-15516-1] c 36 N84-22943
- Portable remote laser sensor for methane leak detection  
[NASA-CASE-NPO-15790-1] c 36 N85-21631
- Digital control of diode laser for atmospheric spectroscopy  
[NASA-CASE-NPO-16000-1] c 36 N85-29264
- Method and means for generation of tunable laser sidebands in the far-infrared region  
[NASA-CASE-NPO-16497-1-CU] c 36 N87-25567
- Isotope separation using tuned laser and electron beam  
[NASA-CASE-NPO-16907-1-CU] c 25 N88-24732
- TUNGSTEN**  
Bonding thermoelectric elements to nonmagnetic refractory metal electrodes  
[NASA-CASE-XGS-04554] c 15 N69-39786
- Method of producing porous tungsten ionizers for ion rocket engines Patent  
[NASA-CASE-XLE-00455] c 28 N70-38197
- Small plasma probe Patent  
[NASA-CASE-XLE-02578] c 25 N71-20747
- Fabrication of controlled-porosity metals Patent  
[NASA-CASE-XNP-04339] c 17 N71-29137
- Tungsten contacts on silicon substrates  
[NASA-CASE-GSC-10695-1] c 09 N72-25259
- Nuclear thermionic converter — tungsten-thorium oxide rods  
[NASA-CASE-NPO-13121-1] c 73 N77-18891
- TUNGSTEN ALLOYS**  
Evaporant holder  
[NASA-CASE-XLA-03105] c 15 N69-27483
- Cobalt-base alloy  
[NASA-CASE-LEW-10438-1] c 17 N73-32415
- Directionally solidified eutectic gamma plus beta nickel-base superalloys  
[NASA-CASE-LEW-12906-1] c 26 N77-32279
- TUNING**  
Active tuned circuit  
[NASA-CASE-GSC-11340-1] c 10 N72-33230
- Magnetically actuated tuning method for Gunn oscillators  
[NASA-CASE-NPO-12106] c 09 N73-15235
- Tuned analog network  
[NASA-CASE-GSC-12650-1] c 33 N84-14421
- Spectrophone stabilized laser with line center offset frequency control  
[NASA-CASE-NPO-15516-1] c 36 N84-22943
- Aircraft rotor blade with passive tuned tab  
[NASA-CASE-ARC-11444-1] c 05 N85-29947

- Precision tunable resonant microwave cavity  
[NASA-CASE-LEW-13835-1] c 33 N87-21234  
Programmable electronic synthesized capacitance  
[NASA-CASE-GSC-12961-1] c 33 N87-22895  
Tailorable infrared sensing device with strain layer  
superlattice structure  
[NASA-CASE-NPO-16607-1-CU] c 76 N88-14836  
Field induced gap infrared detector  
[NASA-CASE-NPO-17528-1-CU] c 35 N89-28796

**TUNNEL DIODES**

- Low power drain semi-conductor circuit  
[NASA-CASE-XGS-04999] c 09 N69-24317  
High band gap 2-6 and 3-5 tunneling junctions for silicon  
multijunction solar cells  
[NASA-CASE-NPO-16526-1-CU] c 44 N87-17399

**TUNNELING (EXCAVATION)**

- Scanning seismic intrusion detection method and  
apparatus — monitoring unwanted subterranean entry and  
departure  
[NASA-CASE-ARC-11317-1] c 35 N83-34272

**TUNNELS**

- Deployable flexible tunnel  
[NASA-CASE-MFS-22636-1] c 37 N76-22540  
Smart tunnel: Docking mechanism  
[NASA-CASE-MSC-21360-1] c 18 N89-25263

**TURBINE BLADES**

- Transpiration cooled turbine blade manufactured from  
wires Patent  
[NASA-CASE-XLE-00020] c 15 N70-33226  
Modification and improvements to cooled blades  
Patent  
[NASA-CASE-XLE-00092] c 15 N70-33264  
High temperature nickel-base alloy Patent  
[NASA-CASE-XLE-00151] c 17 N70-33283  
External liquid-spray cooling of turbine blades Patent  
[NASA-CASE-XLE-00037] c 28 N70-33372  
Liquid spray cooling method Patent  
[NASA-CASE-XLE-00027] c 33 N71-29152  
Welding blades to rotors  
[NASA-CASE-LEW-10533-1] c 15 N73-28515  
Leading edge protection for composite blades  
[NASA-CASE-LEW-12550-1] c 24 N77-19170  
Fully plasma-sprayed compliant backed ceramic turbine  
seal  
[NASA-CASE-LEW-13268-2] c 37 N82-26674  
Method of protecting a surface with a  
silicon-slurry/aluminide coating — coatings for gas turbine  
engine blades and vanes  
[NASA-CASE-LEW-13343-1] c 27 N82-28441  
Fully plasma-sprayed compliant backed ceramic turbine  
seal  
[NASA-CASE-LEW-13268-1] c 27 N82-29453  
Vertical shaft windmill  
[NASA-CASE-LAR-12923-1] c 37 N84-12493

**TURBINE ENGINES**

- High speed, self-acting shaft seal — for use in turbine  
engines  
[NASA-CASE-LEW-11274-1] c 37 N75-21631  
Dual cycle aircraft turbine engine  
[NASA-CASE-LAR-11310-1] c 07 N77-28118  
Composite seal for turbomachinery — backings for  
turbine engine shrouds  
[NASA-CASE-LEW-12131-1] c 37 N79-18318  
Self stabilizing sonic inlet  
[NASA-CASE-LEW-11890-1] c 05 N79-24976  
Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-2] c 37 N80-26658

**TURBINE PUMPS**

- Pulsed energy power system Patent  
[NASA-CASE-MSC-13112] c 03 N71-11057  
Cryogenic cooling system Patent  
[NASA-CASE-NPO-10467] c 23 N71-26654  
Supersonic-combustion rocket  
[NASA-CASE-LEW-11058-1] c 20 N74-13502  
Supercharged topping rocket propellant feed system  
[NASA-CASE-XLE-02062-1] c 20 N80-14188  
Rotor self-lubricating axial stop  
[NASA-CASE-MFS-28273-1] c 37 N88-23974

**TURBINE WHEELS**

- Locking device for turbine rotor blades Patent  
[NASA-CASE-XNP-00816] c 28 N71-28928  
Apparatus for welding blades to rotors  
[NASA-CASE-LEW-10533-2] c 37 N74-11300  
Blade retainer assembly  
[NASA-CASE-LEW-12608-1] c 07 N77-27116

**TURBINES**

- Rotating shaft seal Patent  
[NASA-CASE-XNP-02862-1] c 15 N71-26294  
Method for driving two-phase turbines with enhanced  
efficiency  
[NASA-CASE-NPO-15037-2] c 37 N85-29282

**TURBOCOMPRESSORS**

- Multistage multiple-reentry turbine Patent  
[NASA-CASE-XLE-00170] c 15 N70-36412

- Apparatus and method for reducing thermal stress in  
a turbine rotor  
[NASA-CASE-LEW-12232-1] c 07 N79-10057

- Combustor liner construction  
[NASA-CASE-LEW-14035-1] c 07 N84-24577  
Diesel engine catalytic combustor system — aircraft  
engines  
[NASA-CASE-LEW-12995-1] c 37 N84-33808

**TURBOFAN ENGINES**

- Supersonic fan blading — noise reduction in turbofan  
engines  
[NASA-CASE-LEW-11402-1] c 07 N74-28226  
Noise suppressor — for turbofan engine by incorporating  
annular acoustically porous elements in exhaust and inlet  
ducts  
[NASA-CASE-LAR-11141-1] c 07 N74-32418  
Variable thrust nozzle for quiet turbofan engine and  
method of operating same  
[NASA-CASE-LEW-12317-1] c 07 N78-17055  
Method and apparatus for rapid thrust increases in a  
turbofan engine  
[NASA-CASE-LEW-12971-1] c 07 N80-18039  
Integrated control system for a gas turbine engine  
[NASA-CASE-LEW-12594-2] c 07 N81-19116  
Thrust reverser for a long duct fan engine — for turbofan  
engines  
[NASA-CASE-LEW-13199-1] c 07 N82-26293  
Noise suppressor for turbo fan jet engines  
[NASA-CASE-ARC-10812-1] c 07 N83-33884

**TURBOFANS**

- Dual output variable pitch turbofan actuation system  
[NASA-CASE-LEW-12419-1] c 07 N77-14025  
Reverse pitch fan with divided splitter  
[NASA-CASE-LEW-12760-1] c 07 N77-17059

**TURBOGENERATORS**

- Wind and solar powered turbine  
[NASA-CASE-NPO-15496-1] c 44 N84-23018

**TURBOJET ENGINE CONTROL**

- Integrated control system for a gas turbine engine  
[NASA-CASE-LEW-12594-2] c 07 N81-19116

**TURBOJET ENGINES**

- Telescoping-spike supersonic inlet for aircraft engines  
Patent  
[NASA-CASE-XLE-00005] c 28 N70-39899  
Gas turbine combustion apparatus Patent  
[NASA-CASE-XLE-103477-1] c 28 N71-20330  
Reduction of nitric oxide emissions from a combustor  
[NASA-CASE-ARC-10814-2] c 07 N80-26298

**TURBOMACHINE BLADES**

- Platform for a swing root turbomachinery blade  
[NASA-CASE-LEW-12312-1] c 07 N77-32148  
Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-2] c 37 N80-26658

**TURBOMACHINERY**

- Turbo-machine blade vibration damper Patent  
[NASA-CASE-XLE-00155] c 28 N71-29154  
Composite seal for turbomachinery  
[NASA-CASE-LEW-12131-3] c 37 N82-19540  
Fully plasma-sprayed compliant backed ceramic turbine  
seal  
[NASA-CASE-LEW-13268-1] c 27 N82-29453  
Method of fabricating an abradable gas path seal  
[NASA-CASE-LEW-13269-2] c 37 N84-22957  
Wind and solar powered turbine  
[NASA-CASE-NPO-15496-1] c 44 N84-23018  
Compliant hydrodynamic fluid journal bearing  
[NASA-CASE-LEW-13670-1] c 37 N86-19606  
Damping seal for turbomachinery  
[NASA-CASE-MFS-25842-2] c 37 N86-20788  
Turbomachinery shaft insert  
[NASA-CASE-MFS-28345-2] c 37 N89-28842

**TURBOSHAPES**

- Optical torqueometer Patent  
[NASA-CASE-XLE-00503] c 14 N70-34818  
High speed, self-acting shaft seal — for use in turbine  
engines  
[NASA-CASE-LEW-11274-1] c 37 N75-21631

**TURBULENCE EFFECTS**

- Hydrodynamic skin-friction reduction  
[NASA-CASE-LAR-14078-1-CU] c 34 N90-27071

**TURBULENCE METERS**

- Hot foil transducer skin friction sensor  
[NASA-CASE-LAR-12321-1] c 35 N82-24470

**TURBULENT BOUNDARY LAYER**

- Sound shield  
[NASA-CASE-LAR-12883-1] c 71 N83-17235  
Method for laminar boundary layer transition visualization  
in flight  
[NASA-CASE-LAR-13554-1] c 02 N89-12551

**TURBULENT FLOW**

- Exhaust flow deflector — for ducted gas flow  
[NASA-CASE-LAR-11570-1] c 34 N76-18364  
System for measuring Reynolds in a turbulently flowing  
fluid — signal processing  
[NASA-CASE-ARC-10755-2] c 34 N76-27517

- System for measuring three fluctuating velocity  
components in a turbulently flowing fluid  
[NASA-CASE-ARC-10974-1] c 34 N77-27345

- Detection of the transitional layer between laminar and  
turbulent flow areas on a wing surface — using an  
accelerometer to measure pressure levels during wind  
tunnel tests  
[NASA-CASE-LAR-12261-1] c 02 N80-20224

**AMPLIFIED WIND TURBINE APPARATUS**

- [NASA-CASE-MFS-23830-1] c 44 N82-24639  
Active control of boundary layer transition and  
turbulence  
[NASA-CASE-LAR-13532-1] c 34 N86-26575

**TURNSTILE ANTENNAS**

- Method and means for damping nutation in a satellite  
Patent  
[NASA-CASE-XMF-00442] c 31 N71-10747  
Broadband modified turnstile antenna Patent  
[NASA-CASE-MSC-12209] c 09 N71-24842  
Turnstile slot antenna  
[NASA-CASE-GSC-11428-1] c 32 N74-20864  
Turnstile and flared cone UHF antenna  
[NASA-CASE-LAR-10970-1] c 33 N76-14372

**TURRET**

- Electron beam tube containing a multiple cathode array  
employing indexing means for cathode substitution  
Patent  
[NASA-CASE-NPO-10625] c 09 N71-26182

**TWISTING**

- Means for controlling aerodynamically induced twist  
[NASA-CASE-LAR-12175-1] c 05 N82-28279

**TWO BODY PROBLEM**

- Instrument for measuring potentials on two dimensional  
electric field plots Patent  
[NASA-CASE-XLA-08493] c 10 N71-19421

**TWO DIMENSIONAL BODIES**

- Two-dimensional radiant energy array computers and  
computing devices  
[NASA-CASE-GSC-11839-1] c 60 N77-14751

**TWO PHASE FLOW**

- Two-step rocket engine bipropellant valve Patent  
[NASA-CASE-XMS-04890-1] c 15 N70-22182  
Booster tank system Patent  
[NASA-CASE-MSC-12390] c 27 N71-29155  
Two phase flow system with discrete impinging  
two-phase jets  
[NASA-CASE-NPO-11556] c 12 N72-25292  
Method and turbine for extracting kinetic energy from  
a stream of two-phase fluid  
[NASA-CASE-NPO-14130-1] c 34 N79-20335  
Method for driving two-phase turbines with enhanced  
efficiency  
[NASA-CASE-NPO-15037-2] c 37 N85-29282  
Pumped two-phase heat transfer loop  
[NASA-CASE-MSC-20841-1] c 34 N87-22950  
Pumped two-phase heat transfer loop  
[NASA-CASE-MSC-20841-2] c 34 N88-23958

**TYPEWRITERS**

- Guide for a typewriter  
[NASA-CASE-MFS-15218-1] c 37 N77-19457

**U****U BENDS**

- Technique of elbow bending small jacketed transfer lines  
Patent  
[NASA-CASE-XNP-10475] c 15 N71-24679  
Method for distillation of liquids  
[NASA-CASE-XNP-08124-2] c 06 N73-13129

**ULCERS**

- Indomethacin-antihistamine combination for gastric  
ulceration control  
[NASA-CASE-ARC-11118-2] c 52 N81-14613  
Indomethacin-antihistamine combination for gastric  
ulceration control  
[NASA-CASE-ARC-11118-1] c 52 N81-29764

**ULLAGE**

- Penetrating radiation system for detecting the amount  
of liquid in a tank Patent  
[NASA-CASE-MSC-12280] c 27 N71-18348

**ULTRAHIGH FREQUENCIES**

- Turnstile and flared cone UHF antenna  
[NASA-CASE-LAR-10970-1] c 33 N76-14372  
Dual band combiner for horn antenna  
[NASA-CASE-NPO-14519-1] c 32 N80-23524

**ULTRAHIGH VACUUM**

- Method of lubricating rolling element bearings Patent  
[NASA-CASE-XLE-09527] c 15 N71-17688  
Gauge calibration by diffusion  
[NASA-CASE-XGS-07752] c 14 N73-30390  
Ultrahigh vacuum gauge having two collector  
electrodes  
[NASA-CASE-LAR-02743] c 14 N73-32324



In situ transfer standard for ultrahigh vacuum gage calibration  
[NASA-CASE-LAR-10862-1] c 35 N74-15092  
Precision manipulator heating and cooling apparatus for use in UHV systems with sample transfer capability  
[NASA-CASE-LAR-13040-1] c 37 N85-29286

**ULTRAPURE METALS**

Apparatus for production of ultrapure amorphous metals utilizing acoustic cooling  
[NASA-CASE-NPO-15658-1] c 26 N86-32551

**ULTRASONIC AGITATION**

Apparatus for recovering matter adhered to a host surface  
[NASA-CASE-NPO-11213] c 15 N73-20514

**ULTRASONIC CLEANING**

Acoustic tooth cleaner  
[NASA-CASE-LAR-12471-1] c 52 N82-29862

**ULTRASONIC FLAW DETECTION**

Length mode piezoelectric ultrasonic transducer for inspection of solid objects  
[NASA-CASE-MSC-19672-1] c 38 N79-14398

Two-dimensional scanner apparatus — flaw detector in small flat plates  
[NASA-CASE-MFS-25687-1] c 35 N84-22928

Ultrasonic angle beam standard reflector — ultrasonic nondestructive inspection  
[NASA-CASE-LAR-13153-1] c 71 N86-21276

Ultrasonic method and apparatus for determining crack opening load  
[NASA-CASE-LAR-13889-1] c 39 N88-30160

**ULTRASONIC RADIATION**

Ultrasonic biomedical measuring and recording apparatus — for recording motion of internal organs such as heart valves  
[NASA-CASE-ARC-10587-1] c 52 N74-20726

Biomedical ultrasonoscope  
[NASA-CASE-ARC-10994-1] c 52 N76-33835

Biomedical ultrasonoscope  
[NASA-CASE-ARC-10994-2] c 52 N79-26771

Dual differential interferometer  
[NASA-CASE-LAR-12966-1] c 35 N85-30282

Method for thermal monitoring subcutaneous tissue  
[NASA-CASE-LAR-13028-1] c 52 N85-30618

Acoustic radiation stress measurement  
[NASA-CASE-LAR-13440-1] c 71 N87-21653

**ULTRASONIC SCANNERS**

Cutting head for ultrasonic lithotripsy  
[NASA-CASE-GSC-12944-1] c 52 N86-19885

**ULTRASONIC TESTS**

Ultrasonic scanner for radial and flat panels  
[NASA-CASE-MFS-20335-1] c 35 N74-10415

Ultrasonic scanning system for in-place inspection of brazed tube joints  
[NASA-CASE-MFS-20767-1] c 38 N74-15130

Method and apparatus for nondestructive testing — using high frequency arc discharges  
[NASA-CASE-MFS-21233-1] c 38 N74-15395

CW ultrasonic bolt tensioning monitor  
[NASA-CASE-LAR-12016-1] c 39 N78-15512

Rapid quantification of an internal property — ultrasonic determination of bladder urine quantity  
[NASA-CASE-LAR-13689-1-NP] c 35 N87-23941

Ultrasonic method and apparatus for determining crack opening load  
[NASA-CASE-LAR-13889-1] c 39 N88-30160

**ULTRASONIC WAVE TRANSDUCERS**

Apparatus for recovering matter adhered to a host surface  
[NASA-CASE-NPO-11213] c 15 N73-20514

Ultrasonic bone densitometer  
[NASA-CASE-MFS-20994-1] c 35 N75-12271

Reference apparatus for medical ultrasonic transducer  
[NASA-CASE-ARC-10753-1] c 54 N75-27760

Ultrasonic calibration device — for producing changes in acoustic attenuation and phase velocity  
[NASA-CASE-LAR-11435-1] c 35 N76-15432

Coupling apparatus for ultrasonic medical diagnostic system  
[NASA-CASE-NPO-13935-1] c 52 N79-14751

CDS solid state phase insensitive ultrasonic transducer — annealing dadmium sulfide crystals  
[NASA-CASE-LAR-12304-1] c 35 N80-20559

Liquid-immersible electrostatic ultrasonic transducer  
[NASA-CASE-LAR-12465-1] c 33 N82-26572

Ultrasonic transducer with Gaussian radial pressure distribution  
[NASA-CASE-LAR-12967-1] c 35 N84-22932

Apparatus for disintegrating kidney stones  
[NASA-CASE-GSC-12652-1] c 52 N84-34913

Ultrasonic depth gauge for liquids under high pressure  
[NASA-CASE-LAR-13300-1-CU] c 35 N89-14407

**ULTRASONIC WELDING**

Ultrasonically bonded valve assembly  
[NASA-CASE-NPO-13360-1] c 37 N75-25185

**ULTRASONICS**

Methods and apparatus employing vibratory energy for wrenching Patent  
[NASA-CASE-MFS-20586] c 15 N71-17686

Pseudo continuous wave instrument — ultrasonics  
[NASA-CASE-LAR-12260-1] c 35 N79-10390

Dual differential interferometer  
[NASA-CASE-LAR-12966-1] c 35 N85-30282

Method for thermal monitoring subcutaneous tissue  
[NASA-CASE-LAR-13028-1] c 52 N85-30618

Ultrasonic depth gauge for liquids under high pressure  
[NASA-CASE-LAR-13300-1-CU] c 35 N89-14407

Apparatus for imaging deep arterial and coronary lesions  
[NASA-CASE-NPO-17439-1-CU] c 52 N90-16391

Method and apparatus for characterizing reflected ultrasonic pulses  
[NASA-CASE-LAR-13966-1] c 71 N90-17408

**ULTRAVIOLET FILTERS**

Ultraviolet filter  
[NASA-CASE-XNP-02340] c 23 N69-24332

Ultraviolet resonance lamp Patent  
[NASA-CASE-ARC-10030] c 09 N71-12521

**ULTRAVIOLET LASERS**

Stabilization of He2(a 3 Sigma u+) molecules in liquid helium by optical pumping for vacuum UV laser 6  
[NASA-CASE-NPO-13993-1] c 72 N79-13826

**ULTRAVIOLET RADIATION**

Alkali-metal silicate protective coating  
[NASA-CASE-XGS-04119] c 18 N69-39979

Ultraviolet resonance lamp Patent  
[NASA-CASE-ARC-10030] c 09 N71-12521

Leak detector wherein a probe is monitored with ultraviolet radiation Patent  
[NASA-CASE-ERC-10034] c 15 N71-24896

Phototropic composition of matter  
[NASA-CASE-XGS-03736] c 14 N72-22443

Transmitting and reflecting diffuser — for ultraviolet light  
[NASA-CASE-LAR-10385-2] c 70 N74-13436

Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-1] c 27 N74-21156

Light shield and cooling apparatus — high intensity ultraviolet lamp  
[NASA-CASE-LAR-10089-1] c 34 N74-23066

Flame detector operable in presence of proton radiation  
[NASA-CASE-MFS-21577-1] c 19 N74-29410

Method and apparatus for generating coherent radiation in the ultra-violet region and above by use of distributed feedback  
[NASA-CASE-NPO-13346-1] c 36 N76-29575

Ultraviolet and thermally stable polymer compositions  
[NASA-CASE-ARC-10592-2] c 27 N78-32315

Vitro-violet process for producing flame resistant polyamides and products produced thereby — protective clothing for high oxygen environments  
[NASA-CASE-MSC-16074-1] c 27 N80-26446

**ULTRAVIOLET REFLECTION**

Alkali metal silicate protective coating Patent  
[NASA-CASE-XGS-04799] c 18 N71-24183

Ultraviolet light reflective coating  
[NASA-CASE-GSC-11786-1] c 24 N76-24363

Transmitting and reflecting diffuser — using ultraviolet grade fused silica coatings  
[NASA-CASE-LAR-10385-3] c 74 N78-15879

**ULTRAVIOLET SPECTRA**

Ultraviolet atomic emission detector  
[NASA-CASE-HQN-10756-1] c 14 N72-25428

**ULTRAVIOLET SPECTROMETERS**

Concave grating spectrometer Patent  
[NASA-CASE-XGS-01036] c 14 N70-40003

Telespectrograph Patent  
[NASA-CASE-XLA-03273] c 14 N71-18699

**UMBILICAL CONNECTORS**

Umbilical separator for rockets Patent  
[NASA-CASE-XNP-00425] c 11 N70-38202

Umbilical disconnect Patent  
[NASA-CASE-XLA-00711] c 03 N71-12258

Remote controlled tubular disconnect Patent  
[NASA-CASE-XLA-01396] c 03 N71-12259

Serpentuator Patent  
[NASA-CASE-XMF-05344] c 31 N71-16345

Breakaway connector  
[NASA-CASE-NPO-11140] c 15 N72-17455

Quick disconnect coupling  
[NASA-CASE-NPO-11202] c 15 N72-25450

Deployable flexible tunnel  
[NASA-CASE-MFS-22636-1] c 37 N76-22540

High acceleration cable deployment system  
[NASA-CASE-ARC-11256-1] c 15 N82-24272

**UMBILICAL TOWERS**

Emergency escape system Patent  
[NASA-CASE-XKS-02342] c 05 N71-11199

**UNDERWATER ENGINEERING**

Ejectable underwater sound source recovery assembly  
[NASA-CASE-LAR-10595-1] c 35 N74-16135

Underwater seismic source — for petroleum exploration  
[NASA-CASE-NPO-14255-1] c 46 N79-23555

**UNDERWATER TESTS**

Underwater space suit pressure control regulator  
[NASA-CASE-MFS-20332] c 05 N72-20097

Underwater space suit pressure control regulator  
[NASA-CASE-MFS-20332-2] c 05 N73-25125

**UNIFORM FLOW**

Wind tunnel flow generation section  
[NASA-CASE-ARC-10710-1] c 09 N75-12969

**UNIONS (CONNECTORS)**

Beam connector apparatus and assembly  
[NASA-CASE-MFS-25134-1] c 31 N83-31895

Preloaded space structural coupling joints  
[NASA-CASE-LAR-13489-1] c 18 N87-27713

Mechanized fluid connector and assembly tool system  
[NASA-CASE-MSC-21434-1] c 37 N90-17138

**UNLOADING**

Bootstrap unloader Patent  
[NASA-CASE-ARC-09768] c 09 N71-12516

**UNMANNED SPACECRAFT**

Material handling device Patent  
[NASA-CASE-XNP-09770-3] c 11 N71-27036

**UNSATURATION (CHEMISTRY)**

Stabilized unsaturated polyesters  
[NASA-CASE-NPO-16103-1] c 27 N85-29043

**UP-CONVERTERS**

Method and apparatus for quadriphase-shift-key and linear phase modulation  
[NASA-CASE-NPO-14444-1] c 33 N81-15192

**UPPER ATMOSPHERE**

Telespectrograph Patent  
[NASA-CASE-XLA-03273] c 14 N71-18699

Apparatus for sampling particulates in gases  
[NASA-CASE-HQN-10037-1] c 14 N73-27376

Rocket having barium release system to create ion clouds in the upper atmosphere  
[NASA-CASE-LAR-10670-2] c 15 N74-27360

Microwave limb sounder — measuring trace gases in the upper atmosphere  
[NASA-CASE-NPO-14544-1] c 46 N82-12685

**URANIUM 235**

Isotope separation using metallic vapor lasers  
[NASA-CASE-NPO-13550-1] c 36 N77-26477

**UREAS**

Aldehyde-containing urea-absorbing polysaccharides  
[NASA-CASE-NPO-13620-1] c 27 N77-30236

Dialysis system — using ion exchange resin membranes permeable to urea molecules  
[NASA-CASE-NPO-14101-1] c 52 N80-14687

Reverse osmosis membrane of high urea rejection properties — water purification  
[NASA-CASE-ARC-10980-1] c 27 N80-23452

**URETHANES**

Viscoelastic cationic polymers containing the urethane linkage  
[NASA-CASE-NPO-10830-1] c 27 N81-15104

**URINALYSIS**

Automated fluid chemical analyzer Patent  
[NASA-CASE-XNP-09451] c 06 N71-26754

Method of detecting and counting bacteria in body fluids  
[NASA-CASE-GSC-11092-2] c 04 N73-27052

Automatic instrument for chemical processing to detect microorganism in biological samples by measuring light reactions  
[NASA-CASE-GSC-11169-2] c 05 N73-32011

Determination of antimicrobial susceptibilities on infected urines without isolation  
[NASA-CASE-GSC-12046-1] c 52 N79-14750

**URINATION**

Open type urine receptacle  
[NASA-CASE-MSC-12324-1] c 05 N72-22093

Urine collection device  
[NASA-CASE-MSC-16433-1] c 52 N81-24711

Urine collection apparatus — feminine hygiene  
[NASA-CASE-MSC-18381-1] c 52 N81-28740

**URINE**

Rapid quantification of an internal property — ultrasonic determination of bladder urine quantity  
[NASA-CASE-LAR-13689-1-NP] c 35 N87-23941

**UROLOGY**

Urine collection device  
[NASA-CASE-MSC-16433-1] c 52 N81-24711

**UTERUS**

Cervix-to-rectum measuring device in a radiation applicator for use in the treatment of cervical cancer  
[NASA-CASE-GSC-12081-2] c 52 N82-22875

## V

## V GROOVES

- Vee-notching device — with adjustable carriage  
[NASA-CASE-MFS-20730-1] c 39 N74-13131  
Complementary DMOS-VMOS integrated circuit structure  
[NASA-CASE-GSC-12190-1] c 33 N79-12321  
High voltage v-groove solar cell  
[NASA-CASE-LEW-13401-2] c 44 N83-32177

## VACANCIES (CRYSTAL DEFECTS)

- Bimetallic junctions  
[NASA-CASE-LEW-11573-1] c 26 N77-28265

## VACUUM

- Depositing semiconductor films utilizing a thermal gradient  
[NASA-CASE-XKS-04814] c 15 N69-21460  
Superconducting magnet Patent  
[NASA-CASE-XNP-06503] c 23 N71-29049  
Thermocouples of molybdenum and iridium alloys for more stable vacuum-high temperature performance  
[NASA-CASE-LEW-12174-2] c 35 N79-14346  
Bakeable McLeod gauge  
[NASA-CASE-XGS-01293-1] c 35 N79-33450  
Spray applicator for spraying coatings and other fluids in space  
[NASA-CASE-MSC-18852-1] c 37 N85-29283

## VACUUM APPARATUS

- Null-type vacuum microbalance Patent  
[NASA-CASE-XAC-00472] c 15 N70-40180  
Evacuation port seal Patent  
[NASA-CASE-XMF-03290] c 15 N71-23256  
Apparatus for testing polymeric materials Patent  
[NASA-CASE-XNP-09699] c 06 N71-24607  
Trap for preventing diffusion pump backstreaming  
[NASA-CASE-GSC-10518-1] c 15 N72-22489  
Inductance device with vacuum insulation  
[NASA-CASE-LEW-10330-1] c 09 N72-27226  
Apparatus for producing metal powders  
[NASA-CASE-XLE-06461-2] c 17 N72-28535  
Vacuum probe surface sampler  
[NASA-CASE-LAR-10623-1] c 14 N73-30395  
Vacuum leak detector  
[NASA-CASE-LAR-11237-1] c 35 N75-19612  
Apparatus for positioning modular components on a vertical or overhead surface  
[NASA-CASE-LAR-11465-1] c 37 N76-21554  
Safety shield for vacuum/pressure chamber viewing port  
[NASA-CASE-GSC-12513-1] c 31 N81-19343  
Head for high speed spinner having a vacuum chuck — holding silicon dioxide chips for etching  
[NASA-CASE-NPO-15227-1] c 37 N81-33482  
Static continuous electrophoresis device  
[NASA-CASE-MFS-25306-1] c 25 N83-13187  
Method and apparatus for supercooling and solidifying substances  
[NASA-CASE-MFS-25242-1] c 35 N83-29650  
Space ultra-vacuum facility and method of operation  
[NASA-CASE-MFS-28139-1] c 29 N87-18679  
Low temperature storage container for transporting perishables to space station  
[NASA-CASE-MFS-28248-1] c 31 N88-24817

## VACUUM CHAMBERS

- High-vacuum condenser tank for ion rocket tests Patent  
[NASA-CASE-XLE-00166] c 11 N70-33278  
Split welding chamber Patent  
[NASA-CASE-LEW-11531] c 15 N71-14932  
Space environmental work simulator Patent  
[NASA-CASE-XMF-07488] c 11 N71-18773  
Pressure monitoring with a plurality of ionization gauges controlled at a central location Patent  
[NASA-CASE-XLE-00787] c 14 N71-21090  
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- Method for sequentially processing a multi-level interconnect circuit in a vacuum chamber  
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## VACUUM DEPOSITION

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Vacuum deposition apparatus Patent  
[NASA-CASE-XMF-01667] c 15 N71-17647  
Evaporant source for vapor deposition Patent  
[NASA-CASE-XMF-08065] c 15 N71-20395  
Vacuum evaporator with electromagnetic ion steering Patent  
[NASA-CASE-NPO-10331] c 09 N71-26701  
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[NASA-CASE-ARC-10892-2] c 27 N79-14214  
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[NASA-CASE-LEW-13837-2] c 24 N85-21267

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- High power RF coaxial switch  
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## VACUUM FURNACES

- Apparatus for inserting and removing specimens from high temperature vacuum furnaces  
[NASA-CASE-LAR-10841-1] c 31 N74-27900

## VACUUM GAGES

- Thermopile vacuum gage tube simulator Patent  
[NASA-CASE-XLA-02758] c 14 N71-18481  
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[NASA-CASE-XGS-07752] c 14 N73-30390  
Ultrahigh vacuum measuring ionization gauge  
[NASA-CASE-XLA-05087] c 14 N73-30391  
In situ transfer standard for ultrahigh vacuum gage calibration  
[NASA-CASE-LAR-10862-1] c 35 N74-15092

## VACUUM MELTING

- High temperature furnace for melting materials in space  
[NASA-CASE-MFS-20710] c 11 N72-23215

## VACUUM PUMPS

- Pressure control valve — inflating flexible bladders  
[NASA-CASE-ARC-11251-1] c 37 N81-17433

## VACUUM SPECTROSCOPY

- Optical multiple sample vacuum integrating sphere  
[NASA-CASE-GSC-12849-1] c 74 N86-26190

## VACUUM SYSTEMS

- Shrink-fit gas valve Patent  
[NASA-CASE-XGS-00587] c 15 N70-35087  
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[NASA-CASE-XGS-02441] c 15 N70-41629  
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[NASA-CASE-XLA-07424] c 14 N71-18482  
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[NASA-CASE-XER-09519] c 14 N71-18483  
Vacuum leak detector  
[NASA-CASE-LAR-11237-1] c 35 N75-19612  
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## VACUUM TUBES

- Integrated structure vacuum tube  
[NASA-CASE-ARC-10445-1] c 31 N76-31365  
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[NASA-CASE-NPO-14474-1] c 26 N80-14228

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- High impact pressure regulator Patent  
[NASA-CASE-NPO-10175] c 14 N71-18625

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- Valve actuator Patent  
[NASA-CASE-XHQ-01208] c 15 N70-35409  
Fluid coupling Patent  
[NASA-CASE-XLE-00397] c 15 N70-36492  
High pressure four-way valve Patent  
[NASA-CASE-XNP-00214] c 15 N70-36908  
Reinforcing means for diaphragms Patent  
[NASA-CASE-XNP-01962] c 32 N70-41370  
Multiway vortex valve system Patent  
[NASA-CASE-XMF-04709] c 15 N71-15609  
Multiple orifice throttle valve Patent  
[NASA-CASE-XNP-09698] c 15 N71-18580

- High pressure air valve Patent  
[NASA-CASE-MSC-11010] c 15 N71-19485  
Valve seat with resilient support member Patent  
[NASA-CASE-XKS-02582] c 15 N71-21234  
Positive locking check valve Patent  
[NASA-CASE-XMS-09310] c 15 N71-22706  
Dual latching solenoid valve Patent  
[NASA-CASE-XMS-05890] c 09 N71-23191  
Valve seat  
[NASA-CASE-NPO-10606] c 15 N72-25451  
Evacuation valve  
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Flow control valve — for high temperature fluids  
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[NASA-CASE-MFS-20922-1] c 18 N74-22136  
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[NASA-CASE-MSC-18239-1] c 37 N81-32510  
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[NASA-CASE-MFS-25740-1] c 52 N84-11744  
Moisture content and gas sampling device  
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[NASA-CASE-MSC-20148-1] c 37 N85-29284  
Reactant pressure differential control for fuel cell gases  
[NASA-CASE-MSC-20127-2] c 37 N85-34403  
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[NASA-CASE-MFS-28383-1] c 34 N90-17051  
Apparatus for mixing solutions in low gravity environments  
[NASA-CASE-MFS-26047-1] c 29 N90-21209

## VANES

- Solar vane actuator Patent  
[NASA-CASE-XNP-05535] c 14 N71-23040  
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[NASA-CASE-NPO-11418-1] c 14 N73-13420  
Amplified wind turbine apparatus  
[NASA-CASE-MFS-23830-1] c 44 N82-24639  
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[NASA-CASE-LEW-13343-1] c 27 N82-28441

## VAPOR DEPOSITION

- A method for the deposition of beta-silicon carbide by isopitaxy  
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[NASA-CASE-XLA-02057] c 26 N70-40015  
Method of changing the conductivity of vapor deposited gallium arsenide by the introduction of water into the vapor deposition atmosphere Patent  
[NASA-CASE-XNP-01961] c 26 N71-29156  
Tungsten contacts on silicon substrates  
[NASA-CASE-GSC-10695-1] c 09 N72-25259  
Deposition apparatus  
[NASA-CASE-LAR-10541-1] c 15 N72-32487  
Deposition of alloy films — on irregularly shaped metal object  
[NASA-CASE-LEW-11262-1] c 27 N74-13270  
System for depositing thin films  
[NASA-CASE-MFS-20775-1] c 31 N75-12161  
Vapor deposition apparatus — semiconductors and gallium arsenides  
[NASA-CASE-HON-10482] c 25 N75-29192  
Chemical vapor deposition reactor — providing uniform film thickness  
[NASA-CASE-NPO-13850-1] c 25 N79-28253  
Corrosion resistant coating  
[NASA-CASE-NPO-15928-1] c 26 N85-29005  
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[NASA-CASE-ARC-11852-1] c 27 N87-23737  
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[NASA-CASE-NPO-17399-1-CU] c 76 N89-14120

## VAPOR PHASES

- Fluid dispensing apparatus and method Patent  
[NASA-CASE-XLE-01182] c 27 N71-15635  
Simple method of making photovoltaic junctions Patent  
[NASA-CASE-XNP-01960] c 09 N71-23027  
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[NASA-CASE-NPO-10691] c 14 N71-26199  
Propellant mass distribution metering apparatus Patent  
[NASA-CASE-NPO-10185] c 10 N71-26339  
Pumped two-phase heat transfer loop  
[NASA-CASE-MSC-20841-1] c 34 N87-22950

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- Venting vapor apparatus Patent  
[NASA-CASE-XLE-00288] c 15 N70-34247

## SUBJECT INDEX

Vapor liquid separator Patent  
[NASA-CASE-XMF-04042] c 15 N71-23023

Method and apparatus for convection control of metallic halide vapor density in a metallic halide laser  
[NASA-CASE-NPO-15021-1] c 38 N83-10417

**VAPOR TRAPS**  
Sorption vacuum trap Patent  
[NASA-CASE-XER-09519] c 14 N71-18483

**VAPORIZERS**  
Boiler for generating high quality vapor Patent  
[NASA-CASE-XLE-00785] c 33 N71-18104

Particle analyzing method and apparatus  
[NASA-CASE-NPO-15292-1] c 35 N83-27184

Continuous laminar smoke generator  
[NASA-CASE-LAR-13014-1] c 09 N85-21178

**VAPORIZING**  
Gas liquefaction and dispensing apparatus Patent  
[NASA-CASE-NPO-10070] c 15 N71-27372

Method for controlling vapor content of a gas  
[NASA-CASE-NPO-10633] c 03 N72-28025

Hypervelocity impact shield  
[NASA-CASE-MSC-21420-1] c 18 N90-26858

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[NASA-CASE-NPO-15609-2] c 25 N88-23846

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[NASA-CASE-MSC-13201-1] c 07 N71-28429

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[NASA-CASE-XGS-02171] c 09 N69-24324

Multiple varactor frequency doubler Patent  
[NASA-CASE-XMF-04958-1] c 10 N71-28414

Millimeter wave pumped parametric amplifier  
[NASA-CASE-GSC-11617-1] c 33 N74-32660

Maser cavity servo-tuning system  
[NASA-CASE-NPO-15890-1-CU] c 33 N85-29143

**VARIABILITY**  
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[NASA-CASE-GSC-12643-1] c 37 N83-26078

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[NASA-CASE-LAR-12541-1] c 05 N84-22551

**VARIABLE CYCLE ENGINES**  
Dual cycle aircraft turbine engine  
[NASA-CASE-LAR-11310-1] c 07 N77-28118

Variable cycle gas turbine engines  
[NASA-CASE-LEW-12916-1] c 37 N78-17384

Variable mixer propulsion cycle  
[NASA-CASE-LEW-12917-1] c 07 N78-18067

**VARIABLE GEOMETRY STRUCTURES**  
Landing arrangement for aerial vehicles Patent  
[NASA-CASE-XLA-00142] c 02 N70-33286

Variable geometry wind tunnels  
[NASA-CASE-XLA-07430] c 11 N72-22246

Aircraft engine nozzle  
[NASA-CASE-ARC-10877-1] c 07 N80-32392

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Dual output variable pitch turbofan actuation system  
[NASA-CASE-LEW-12419-1] c 07 N77-14025

Impact absorbing blade mounts for variable pitch blades  
[NASA-CASE-LEW-12313-1] c 37 N78-10468

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[NASA-CASE-XLA-00230] c 02 N70-33255

Variable sweep wing aircraft Patent  
[NASA-CASE-XLA-00221] c 02 N70-33266

Variable-span aircraft Patent  
[NASA-CASE-XLA-00168] c 02 N70-34178

Variable sweep aircraft wing Patent  
[NASA-CASE-XLA-00350] c 02 N70-38011

Variable sweep aircraft Patent  
[NASA-CASE-XLA-03659] c 02 N71-11041

Dual-fuselage aircraft having yawable wing and horizontal stabilizer  
[NASA-CASE-ARC-10470-1] c 02 N73-26005

**VARIABLE THRUST**  
Variable thrust ion engine utilizing thermally decomposable solid fuel Patent  
[NASA-CASE-XMF-00923] c 28 N70-36802

Method for continuous variation of propellant flow and thrust in propulsive devices Patent  
[NASA-CASE-XLE-00177] c 28 N70-40367

Variable thrust nozzle for quiet turbofan engine and method of operating same  
[NASA-CASE-LEW-12317-1] c 07 N78-17055

**VARIATIONS**  
Bidirectional step torque filter with zero backlash characteristic Patent  
[NASA-CASE-XGS-04227] c 15 N71-21744

**VECTOR ANALYSIS**  
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[NASA-CASE-XAC-04886-1] c 14 N71-20439

**VECTOR CURRENTS**  
Preloadable vector sensitive latch  
[NASA-CASE-MSC-20910-1] c 37 N87-25582

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Biomedical electrode arrangement Patent  
[NASA-CASE-XFR-10856] c 05 N71-11189

## VEGETATION GROWTH

Rotary plant growth accelerating apparatus — weightlessness  
[NASA-CASE-ARC-10722-1] c 51 N75-25503

Remote sensing of vegetation and soil using microwave ellipsometry  
[NASA-CASE-GSC-11876-1] c 43 N78-10529

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[NASA-CASE-NPO-15213-1] c 51 N83-17045

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Deformable vehicle wheel Patent  
[NASA-CASE-MFS-20400] c 31 N71-18611

Resilient wheel Patent  
[NASA-CASE-MFS-13929] c 15 N71-27091

Omnidirectional wheel  
[NASA-CASE-MFS-21309-1] c 37 N74-18125

Two speed drive system — mechanical device for changing speed on rotating vehicle wheel  
[NASA-CASE-MFS-20645-1] c 37 N74-23070

Fifth wheel  
[NASA-CASE-FRC-10081-1] c 37 N77-14477

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[NASA-CASE-LAR-11695-2] c 37 N81-24443

Suspension system for a wheel rolling on a flat track — bearings for directional antennas  
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Magnetic suspension and pointing system  
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Suspension system for a wheel rolling on a flat track — bearings for directional antennas  
[NASA-CASE-NPO-14395-1] c 37 N82-21587

Tank tread assemblies with track-linking mechanism  
[NASA-CASE-NPO-16321-1CU] c 37 N87-17034

## VELOCITY

Velocity limiting safety system Patent  
[NASA-CASE-XLA-07473] c 15 N71-24895

## VELOCITY COUPLING

Coupled cavity traveling wave tube with velocity tapering  
[NASA-CASE-LEW-12296-1] c 33 N82-26568

## VELOCITY MEASUREMENT

Micrometeoroid velocity measuring device Patent  
[NASA-CASE-XLA-00495] c 14 N70-41332

Superconductive accelerometer Patent  
[NASA-CASE-XMF-01099] c 14 N71-15969

Gravimeter Patent  
[NASA-CASE-XMF-05844] c 14 N71-17587

Laser Doppler system for measuring three dimensional vector velocity Patent  
[NASA-CASE-MFS-20386] c 21 N71-19212

Particle detection apparatus including a ballistic pendulum Patent  
[NASA-CASE-XMS-04201] c 14 N71-22990

Angular velocity and acceleration measuring apparatus  
[NASA-CASE-ERC-10292] c 14 N72-25410

Flow velocity and directional instrument  
[NASA-CASE-LAR-10855-1] c 14 N73-13415

Doppler shift system — system for measuring velocities of radiating particles  
[NASA-CASE-HQN-10740-1] c 72 N74-19310

Tachometer  
[NASA-CASE-MFS-23175-1] c 35 N77-30436

Velocity measurement system  
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Fluid velocity measuring device  
[NASA-CASE-LAR-11729-1] c 34 N78-12359

Air speed and attitude probe  
[NASA-CASE-FRC-11009-1] c 06 N80-18036

Fluidic angular velocity sensor  
[NASA-CASE-NPO-16479-1CU] c 35 N86-32695

Spinning disk calibration method and apparatus for laser Doppler velocimeter  
[NASA-CASE-ARC-11510-1] c 35 N88-32697

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Molecular beam velocity selector Patent  
[NASA-CASE-XLE-01533] c 11 N71-10777

Apparatus for controlling the velocity of an electromechanical drive for interferometers and the like Patent  
[NASA-CASE-XGS-03532] c 14 N71-17627

## VENTILATION

Protective garment ventilation system  
[NASA-CASE-XMS-04928] c 54 N78-17679

Low-drag ground vehicle particularly suited for use in safely transporting livestock  
[NASA-CASE-FRC-11058-1] c 85 N82-33288

Ballast system for maintaining constant pressure in a glove box  
[NASA-CASE-NPO-17788-1-CU] c 35 N90-17104

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Heat sterilizable patient ventilator  
[NASA-CASE-NPO-13313-1] c 54 N75-27761

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Venting vapor apparatus Patent  
[NASA-CASE-XLE-00288] c 15 N70-34247

Liquid storage tank venting device for zero gravity environment Patent  
[NASA-CASE-XLE-01449] c 15 N70-41648

Valve seat with resilient support member Patent  
[NASA-CASE-XKS-02582] c 15 N71-21234

Venting device for pressurized space suit helmet Patent  
[NASA-CASE-XMS-09652-1] c 05 N71-26333

Solid propellant rocket motor  
[NASA-CASE-XNP-03282] c 28 N72-20758

Passive venting technique for shallow cavities  
[NASA-CASE-LAR-13875-1] c 05 N89-14233

Passive venting technique for shallow cavities  
[NASA-CASE-LAR-14031-1] c 05 N90-20079

System for venting gas from a liquid storage tank  
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Space simulator Patent  
[NASA-CASE-XNP-00459] c 11 N70-38675

### VERTICAL FLIGHT

Aircraft instrument Patent  
[NASA-CASE-XLA-00487] c 14 N70-40157

### VERTICAL LANDING

Landing gear Patent  
[NASA-CASE-XMF-01174] c 02 N70-41589

### VERTICAL ORIENTATION

Vertical shaft windmill  
[NASA-CASE-LAR-12923-1] c 37 N84-12493

### VERTICAL TAKEOFF AIRCRAFT

Mechanical stability augmentation system Patent  
[NASA-CASE-XLA-06339] c 02 N71-13422

Attitude controls for VTOL aircraft Patent  
[NASA-CASE-XAC-08972] c 02 N71-20570

### VERY HIGH FREQUENCIES

VHF/UHF parasitic probe antenna Patent  
[NASA-CASE-XKS-09340] c 07 N71-24814

### VERY LARGE SCALE INTEGRATION

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[NASA-CASE-NPO-16021-1] c 33 N85-30187

Method of examining microcircuit patterns  
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Systolic VLSI array for implementing the Kalman filter algorithm  
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Network of dedicated processors for finding lowest-cost map path  
[NASA-CASE-NPO-17716-1-CU] c 62 N90-10608

VLSI single-chip (255,223) Reed-Solomon encoder with interleaver  
[NASA-CASE-NPO-17280-1-CU] c 17 N90-21061

VLSI binary updown counter  
[NASA-CASE-NPO-17205-1-CU] c 60 N90-21525

VLSI architecture for a Reed-Solomon decoder  
[NASA-CASE-NPO-17897-1-CU] c 33 N90-27040

Neural network with dynamically adaptable neurons  
[NASA-CASE-NPO-17803-1-CU] c 62 N90-27385

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System for real-time crustal deformation monitoring  
[NASA-CASE-NPO-14124-1] c 46 N80-14603

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Life preserver Patent  
[NASA-CASE-XMS-00864] c 05 N70-36493

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Passive caging mechanism Patent  
[NASA-CASE-GSC-10306-1] c 15 N71-24694

Active vibration isolator for flexible bodies Patent  
[NASA-CASE-LAR-10106-1] c 15 N71-27169

Apparatus for disintegrating kidney stones  
[NASA-CASE-GSC-12652-1] c 52 N84-34913

Vibrating-chamber levitation systems  
[NASA-CASE-NPO-16142-1-CU] c 35 N88-20752

Vibration analyzer  
[NASA-CASE-MSC-21408-1] c 37 N89-28829

Suspension mechanism and method  
[NASA-CASE-LAR-14142-1] c 37 N90-27116

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Viscous pendulum damper Patent  
[NASA-CASE-LAR-10274-1] c 14 N71-17626

Digital filter for reducing sampling jitter in digital control systems Patent  
[NASA-CASE-NPO-11088] c 08 N71-29034

Turbo-machine blade vibration damper Patent  
[NASA-CASE-XLE-00155] c 28 N71-29154

Active notch filter network with variable notch depth, width and frequency  
[NASA-CASE-FRC-11055-1] c 33 N80-29583

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- Spherical bearing — to reduce vibration effects  
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- Self-locking double retention redundant full pin release  
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[NASA-CASE-XLA-01019] c 15 N70-40156
- Vibration damping system Patent  
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- Hermetic sealed vibration damper Patent  
[NASA-CASE-MSC-10959] c 15 N71-26243
- Dynamic vibration absorber Patent  
[NASA-CASE-LAR-10083-1] c 15 N71-27006
- Vibration isolation system using compression springs  
[NASA-CASE-NPO-11012] c 15 N72-11391
- Thrust-isolating mounting — characteristics of support for loads mounted in spacecraft  
[NASA-CASE-MFS-21680-1] c 18 N74-27397
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[NASA-CASE-NPO-13253-1] c 37 N75-18573
- Thermal insulation attaching means — adhesive bonding of felt vibration insulators under ceramic tiles  
[NASA-CASE-MSC-12619-2] c 27 N79-12221
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[NASA-CASE-LAR-12468-1] c 08 N82-32373
- Vibration isolation and pressure compensation apparatus for sensitive instrumentation  
[NASA-CASE-LAR-12728-1] c 35 N83-32026
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[NASA-CASE-ARC-11444-1] c 05 N85-29947
- Variable force, eddy-current or magnetic damper  
[NASA-CASE-LEW-13717-1] c 37 N85-30333
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[NASA-CASE-MFS-10154-1] c 14 N72-22440
- Method and apparatus for vibration analysis utilizing the Mossbauer effect  
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- Displacement probes with self-contained exciting medium  
[NASA-CASE-LAR-11690-1] c 35 N80-14371
- Emitted vibration measurement device and method  
[NASA-CASE-MFS-25981-1] c 35 N87-14670
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[NASA-CASE-LAR-10310-1] c 10 N73-20253
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[NASA-CASE-LAR-10274-1] c 14 N71-17626
- Aircraft liftmeter  
[NASA-CASE-LAR-12518-1] c 06 N86-27280
- WIND MEASUREMENT**
- Passive optical wind and turbulence detection system Patent  
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- Maxometers (peak wind speed anemometers)  
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- Wind sensor  
[NASA-CASE-NPO-13462-1] c 35 N76-24524
- Focused laser Doppler velocimeter  
[NASA-CASE-MFS-23178-1] c 35 N77-10493
- Wind measurement system  
[NASA-CASE-MFS-23362-1] c 47 N77-10753
- WIND PROFILES**
- Wind velocity probing device and method Patent  
[NASA-CASE-XLA-02081] c 20 N71-16281
- WIND SHEAR**
- CAT altitude avoidance system  
[NASA-CASE-NPO-15351-1] c 06 N83-10040
- Aircraft liftmeter  
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- WIND TUNNEL APPARATUS**
- Wind tunnel airstream oscillating apparatus Patent  
[NASA-CASE-XLA-00112] c 11 N70-33287
- Electric arc device for heating gases Patent  
[NASA-CASE-XAC-00319] c 25 N70-41628
- Test unit free-flight suspension system Patent  
[NASA-CASE-MFS-12915] c 11 N71-15926
- Burst diaphragm flow initiator Patent  
[NASA-CASE-MFS-12915] c 11 N71-17600
- Electric arc apparatus Patent  
[NASA-CASE-XAC-01677] c 09 N71-20816
- Model launcher for wind tunnels Patent  
[NASA-CASE-XNP-03578] c 11 N71-23030
- Wind tunnel microphone structure Patent  
[NASA-CASE-NPO-00250] c 11 N71-28779
- Wind tunnel  
[NASA-CASE-LAR-10135-1] c 09 N79-21083
- Metric half-span model support system  
[NASA-CASE-LAR-12441-1] c 09 N82-23254
- Airfoil flutter model suspension system  
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- WIND TUNNEL CALIBRATION**
- Rotary target V-block  
[NASA-CASE-LAR-12007-3] c 35 N84-16523
- WIND TUNNEL DRIVES**
- Electric arc driven wind tunnel Patent  
[NASA-CASE-XMF-00411] c 11 N70-36913
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- Multilegged support system Patent  
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- Model launcher for wind tunnels Patent  
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- Wind tunnel model damper Patent  
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- Wind tunnel model and method  
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- Method for determining thermo-physical properties of specimens — photographic recording of changes in thin film phase-change temperature indicating material in wind tunnel  
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- Aeroelastic instability stoppers for wind tunnel models  
[NASA-CASE-LAR-12458-1] c 44 N83-21503
- Aeroelastic instability stoppers for wind tunnel models  
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- Model mount system for testing flutter  
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- Airfoil flutter model suspension system  
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[NASA-CASE-MSC-19706-1] c 09 N78-31129
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- Miniature remote dead weight calibrator  
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- Device for quick changeover between wind tunnel force and pressure testing  
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- Wind tunnel flow generation section  
[NASA-CASE-ARC-10710-1] c 09 N75-12969
- Apparatus for reducing aerodynamic noise in a wind tunnel  
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- Static pressure orifice system testing method and apparatus  
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- Wind and solar powered turbine  
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[NASA-CASE-LAR-12971-1] c 47 N84-28292
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- Pulse coupling circuit  
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- Vertical shaft windmill  
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- Slotted variable camber flap  
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- System for use in conducting wake investigation for a wing in flight — differential pressure measurements for drag investigations  
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- Joining lead wires to thin platinum alloy films  
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- Laser measuring system for incremental assemblies — measuring wire-wrapped frame assemblies in spark chambers  
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- Test apparatus for locating shorts during assembly of electrical buses  
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- Phase sensitive guidance sensor for wire-following vehicles  
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- Method of radiographic inspection of wooden members  
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- Parallel generation of the check bits of a PN sequence Patent  
[NASA-CASE-XNP-04623] c 10 N71-26103
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- System for enhancing tool-exchange capabilities of a portable wrench  
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- Zero torque gear head wrench  
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- Apparatus for use in examining the lattice of a semiconductor wafer by X-ray diffraction  
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- Real-time 3-D X-ray and gamma-ray viewer  
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- Low intensity X-ray and gamma-ray spectrometer  
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- Three mirror glancing incidence system for X-ray telescope  
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- Method of and means for testing a glancing-incidence mirror system of an X-ray telescope  
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- Extended range X-ray telescope  
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- Variable magnification variable dispersion glancing incidence imaging x ray spectroscopic telescope  
[NASA-CASE-MFS-28013-3] c 89 N90-27594
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- Selective image area control of X-ray film exposure density  
[NASA-CASE-NPO-13808-1] c 35 N78-15461
- Three-dimensional and tomographic imaging device for X-ray and gamma-ray emitting objects  
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## X-Y PLOTTERS

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- Particle parameter analyzing system — x-y plotter circuits and display  
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- Purging means and method for Xenon arc lamps  
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- Thrust augmented spin recovery device  
[NASA-CASE-LAR-11970-2] c 08 N81-19130
- Actuated forebody strakes  
[NASA-CASE-LAR-13983-1] c 05 N90-23390

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## YTTRIUM

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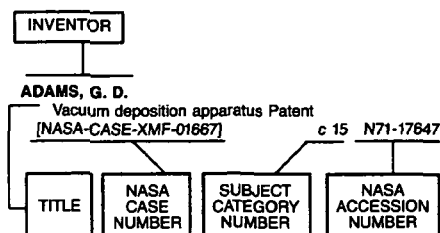
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### Typical Inventor Index Listing



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## DAVIS, D. C.

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- Transmitting and reflecting diffuser  
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- Transmitting and reflecting diffuser  
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- Low onset rate energy absorber  
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## KEEFER, J. M.

- Phonocardiogram simulator Patent  
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## KEENE, W. H.

- Clear air turbulence detector  
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- Focused laser Doppler velocimeter  
[NASA-CASE-MFS-23178-1] c 35 N77-10493

## KEETON, A. R.

- Sodium storage and injection system  
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- Space and atmospheric reentry vehicle Patent  
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- Space capsule Patent  
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- Space capsule Patent  
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- Warm fog dissipation using large volume water sprays  
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## KELLEY, H. L.

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## KELLY, D. L.

- Multistage aerospace craft  
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## KELLY, H. N.

- Shell tile thermal protection system  
[NASA-CASE-LAR-12862-1] c 27 N84-27886

## KELLY, W. L., IV

- Spectrometer integrated with a facsimile camera  
[NASA-CASE-LAR-11207-1] c 35 N75-19613

- Device for measuring the contour of a surface  
[NASA-CASE-LAR-11869-1] c 74 N78-27904

## KELLY, W. W.

- Velocity vector control system augmented with direct lift control  
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## KELM, J. S.

- Flow modifying device  
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## KELSEY, E. L.

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[NASA-CASE-XLA-08507] c 09 N89-39984

- SCR blocking pulse gate amplifier Patent  
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## KEMP, K. L.

- Pneumatic mirror support system  
[NASA-CASE-XLA-03271] c 11 N89-24321

## KEMP, R. F.

- Apparatus for field strength measurement of a space vehicle Patent  
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- Thin-walled pressure vessel Patent  
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## KENDAL, J. M.

- Pressure shutdown method and device for coal conversion systems  
[NASA-CASE-NPO-15100-1] c 44 N84-14583

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- Resolution enhanced sound detecting apparatus  
[NASA-CASE-NPO-14134-1] c 71 N79-23753

## KENDALL, J. M., JR.

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[NASA-CASE-MFS-14711] c 15 N71-26185

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[NASA-CASE-NPO-15496-1] c 44 N84-23018

## KOH, W. H.

- Distributed multiport memory architecture  
[NASA-CASE-NPO-15342-1] c 60 N83-32342

## KOJIMA, G. K.

- Miniature implantable ultrasonic echosonometer  
[NASA-CASE-ARC-11035-1] c 52 N79-18580

## KOJIRO, D. R.

- Modulated voltage metastable ionization detector  
[NASA-CASE-ARC-11503-1] c 35 N85-34374

## KOLBLY, R. B.

- High power microwave power divider Patent  
[NASA-CASE-NPO-11031] c 07 N71-33606

- System for controlling the operation of a variable signal device  
[NASA-CASE-NPO-11064] c 07 N72-11150

## KOLBY, R. B.

- Direct reading inductance meter  
[NASA-CASE-NPO-13792-1] c 35 N77-32455

## KOLIAD, K. M.

- Copper doped polycrystalline silicon solar cell  
[NASA-CASE-NPO-14670-1] c 44 N81-19558

- Method of increasing minority carrier lifetime in silicon web or the like  
[NASA-CASE-NPO-15530-1] c 76 N83-35888

## KOLOBOFF, G. J.

- Amplitude steered array  
[NASA-CASE-GSC-11448-1] c 33 N74-20860

## KOLSTEE, H. M.

- Radiator deployment actuator Patent  
[NASA-CASE-MSC-11817-1] c 15 N71-26611

## KONIGSBERG, E.

- Accelerometer telemetry system  
[NASA-CASE-ARC-10849-1] c 17 N76-29347

## KOONTZ, STEVEN L.

- Microporous structure with layered interstitial surface treatment, and method and apparatus for preparation thereof  
[NASA-CASE-MSC-21487-1] c 25 N90-16887

## KOPPELSON, S.

- Rate augmented digital to analog converter Patent  
[NASA-CASE-XLA-07828] c 08 N71-27057

## KOPETSKI, F. J.

- Ring counter  
[NASA-CASE-XGS-03095] c 09 N69-27463

## KOPIA, L. P.

- Transmitting and reflecting diffuser  
[NASA-CASE-LAR-10385-2] c 70 N74-13436

- Transmitting and reflecting diffuser  
[NASA-CASE-LAR-10385-3] c 74 N79-15879

## KORABOWSKI, J. J.

- Pressure garment joint Patent  
[NASA-CASE-XMS-09638] c 05 N71-12344

- Method of forming a root cord restrained convolute section  
[NASA-CASE-MSC-12398] c 05 N72-20098

## KORB, C. L.

- Method of and apparatus for measuring temperature and pressure  
[NASA-CASE-GSC-12558-1] c 36 N85-21639

## KORDES, E. E.

- High intensity heat and light unit Patent  
[NASA-CASE-XLA-00141] c 09 N70-33312

## KORNFIELD, D. M.

- Process for preparation of large-particle-size monodisperse latexes  
[NASA-CASE-MFS-25000-1] c 25 N81-19242

## KORSCH, D. G.

- Anastigmatic three-mirror telescope  
[NASA-CASE-MFS-23675-1] c 89 N79-10969

## KORUS, R. A.

- Process for the preparation of fluorine containing crosslinked elastomeric polytriazine and product so produced  
[NASA-CASE-ARC-11248-1] c 27 N81-17259

## KORVIN, W.

- Self-erecting reflector Patent  
[NASA-CASE-XGS-09190] c 31 N71-16102

- Tracking antenna system Patent  
[NASA-CASE-GSC-10553-1] c 07 N71-19854

- Antenna array at focal plane of reflector with coupling network for beam switching Patent  
[NASA-CASE-GSC-10220-1] c 07 N71-27233

## KOSCHMEDE, L. A.

- Bi-polar phase detector and corrector for split phase PCM data signals Patent  
[NASA-CASE-XGS-01590] c 07 N71-12392

## KOSMAHL, H. C.

- Multistage depressed collector for dual mode operation  
[NASA-CASE-LEW-13282-1] c 33 N82-24415

## KOSMAHL, H. G.

- Linear magnetic brake with two windings Patent  
[NASA-CASE-XLE-05079] c 15 N71-17652

- Electrostatic collector for charged particles  
[NASA-CASE-LEW-11182-1] c 09 N73-13208

- Electron beam controller  
[NASA-CASE-LEW-11817-1] c 33 N74-10195

- Gyrotron transmitting tube  
[NASA-CASE-LEW-13429-1] c 33 N83-31952

- Ladder supported ring bar circuit  
[NASA-CASE-LEW-13570-1] c 33 N84-16452

- Dielectric based submillimeter backward wave oscillator circuit  
[NASA-CASE-LEW-13736-1] c 33 N84-27974

- Linearized traveling wave amplifier with hard limiter characteristics  
[NASA-CASE-LEW-13981-2] c 33 N86-21742

## KOSMAHL, HENRY G.

- Miniature traveling wave tube and method of making  
[NASA-CASE-LEW-14520-1] c 33 N90-22724

## KOSMO, J. J.

- Extravehicular tunnel suit system Patent  
[NASA-CASE-MSC-12243-1] c 05 N71-24728

## KOSMO, JOSEPH J.

- Hazards protection for space suits and spacecraft  
[NASA-CASE-MSC-21366-1] c 54 N89-12206

- Don/doff support stand for use with rear entry space suits  
[NASA-CASE-MSC-21364-1] c 54 N89-13889

- Polycarbonate article with chemical resistant coating  
[NASA-CASE-MSC-21503-1] c 27 N90-16925

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[NASA-CASE-MSC-21366-1] c 54 N90-25498

## KOSSON, R. L.

- Monogroove heat pipe design: Insulated liquid channel with bridging wick  
[NASA-CASE-MSC-20497-1] c 34 N85-29180

## KOTHE, E.

- Helmet feedport  
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## KOURTIDES, D. A.

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[NASA-CASE-ARC-11040-2] c 24 N78-27184

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- Fire blocking systems for aircraft seat cushions  
[NASA-CASE-ARC-11423-1] c 03 N84-33394

- Light weight fire resistant graphite composites  
[US-PATENT-4,598,007] c 24 N86-28131

- Polymer of phosphonylmethyl-2,4- and -2,6-diamino benzene and polyfunctional monomer  
[NASA-CASE-ARC-11506-2] c 23 N86-32525

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[NASA-CASE-ARC-11512-2] c 27 N86-32568

## KOURTIDES, DEMETRIUS A.

- Fire and heat resistant laminating resins based on maleimide and citraconimido substituted 1-2,4- and -2,6-diaminobenzenes  
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- Fire and heat resistant laminating resins based on maleimide and citraconimido substituted 1-(diorgano oxyphosphonyl) methyl -2,4- and -2,6-diaminobenzenes  
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- The 1-(diorganooxy phosphonyl) methyl-2,4- and -2,6-diamino benzenes and their derivatives  
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- The 1-(diorganooxyphosphonyl)-methyl-2,4- and -2,6-diamido benzenes  
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## KOYBAYASHI, H. S.

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## KOZIOL, J. S., JR.

- Aircraft control system  
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## KRAMER, F.

- Device for suppressing sound and heat produced by high-velocity exhaust jets Patent  
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## KRAMER, J. S.

- Apparatus for determining thermophysical properties of test specimens  
[NASA-CASE-LAR-11883-1] c 09 N77-27131

## KRAMER, M.

- Electronic amplifier with power supply switching Patent  
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- Power supply Patent  
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## KRASIN, F. E.

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## KRATZER, R. H.

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## KRAUSE, F. R.

- Passive optical wind and turbulence detection system Patent  
[NASA-CASE-XMF-14032] c 20 N71-16340

## KRAUSE, I. A.

- Satellite interlace synchronization system  
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## KRAUSE, L. N.

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## KRAUSE, M. C.

- Focused laser Doppler velocimeter  
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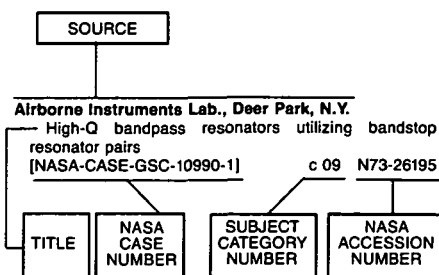
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[NASA-CASE-XNP-05634] c 15 N71-24834
- Hydroforming techniques using epoxy molds Patent  
[NASA-CASE-XLE-05641-1] c 15 N71-26346
- Electrical apparatus for detection of thermal decomposition of insulation Patent  
[NASA-CASE-XMF-03968] c 14 N71-27186
- Method and apparatus for nondestructive testing of pressure vessels  
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- Aerojet-General Corp., Glendale, CA.**  
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- Aerojet-General Corp., Sacramento, CA.**  
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- Air Products and Chemicals, Inc., Philadelphia, PA.**  
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- Airborne Instruments Lab., Deer Park, NY.**  
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- AIRResearch Mfg. Co., Torrance, CA.**  
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- Airtronics, Inc., Washington, DC.**  
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[NASA-CASE-XGS-04808] c 03 N69-25146
- Inverter with means for base current shaping for sweeping charge carriers from base region Patent  
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- American Air Filter Co., Inc., Saint Louis, MO.**  
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[NASA-CASE-XLA-03271] c 11 N69-24321
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- Anocut Engineering Co., Chicago, IL.**  
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[NASA-CASE-ARC-11311-1] c 74 N83-13978
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[NASA-CASE-MFS-25436-1] c 27 N83-36220
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[NASA-CASE-MSC-13932-1] c 62 N74-14920
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[NASA-CASE-LAR-10423-1] c 23 N82-29358
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[NASA-CASE-XHQ-01208] c 15 N70-35409
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[NASA-CASE-GSC-11569-1] c 89 N74-30886
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[NASA-CASE-XGS-01245-1] c 35 N79-33449
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[NASA-CASE-GSC-11367-1] c 44 N74-19692
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[NASA-CASE-XMF-02786] c 17 N71-20743
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[NASA-CASE-MSC-13648] c 05 N72-27103

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[NASA-CASE-MSC-14905-1] c 37 N77-28487

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Patent  
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[NASA-CASE-LAR-10623-1] c 14 N73-30395

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[NASA-CASE-GSC-11743-1] c 32 N75-24981  
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Patent  
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[NASA-CASE-NPO-10046] c 28 N72-17843  
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[NASA-CASE-MSC-13397-1] c 21 N72-25595

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[NASA-CASE-ARC-11057-1] c 27 N78-31233  
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[NASA-CASE-GSC-11802-1] c 33 N74-21850

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[NASA-CASE-LAR-12552-1] c 35 N82-11431

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[NASA-CASE-MSC-16841-1] c 34 N78-24285  
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[NASA-CASE-NPO-14416-1] c 44 N81-14389

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[NASA-CASE-KSC-10723-1] c 37 N75-13265

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[NASA-CASE-MSC-16260-1] c 51 N80-16714

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[NASA-CASE-MFS-15063] c 14 N72-25412  
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[NASA-CASE-XNP-09205] c 14 N71-17657  
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[NASA-CASE-XLA-05968] c 15 N72-12408  
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[NASA-CASE-NPO-10401] c 03 N72-20033  
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[NASA-CASE-GSC-10303] c 15 N72-22487  
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[NASA-CASE-NPO-10812] c 15 N73-13484  
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[NASA-CASE-GSC-10019-1] c 44 N82-24641  
Separator for alkaline batteries and method of making same  
[NASA-CASE-GSC-10350-1] c 44 N82-24642  
Separator for alkaline electric cells and method of making  
[NASA-CASE-GSC-10017-1] c 44 N82-24643  
Separator for alkaline electric batteries and method of making  
[NASA-CASE-GSC-10018-1] c 44 N82-24644  
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[NASA-CASE-GSC-10349-1] c 44 N82-24645  
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[NASA-CASE-XMF-04966] c 14 N71-17658  
Method of recording a gas flow pattern  
Patent  
[NASA-CASE-XMF-01779] c 12 N71-20815  
Trigonometric vehicle guidance assembly which aligns the three perpendicular axes of two three-axes systems  
Patent  
[NASA-CASE-XMF-00684] c 21 N71-21688  
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Patent  
[NASA-CASE-XMF-04042] c 15 N71-23023  
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Patent  
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[NASA-CASE-XNP-02982] c 31 N70-41855  
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[NASA-CASE-NPO-13689-2] c 44 N81-29525  
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[NASA-CASE-NPO-14448-1] c 74 N81-29963  
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[NASA-CASE-NPO-14542-1] c 25 N82-23282  
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[NASA-CASE-NPO-15358-1] c 33 N83-27126  
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[NASA-CASE-NPO-15210-1] c 25 N84-22709  
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[NASA-CASE-NPO-15640-1] c 27 N84-22748  
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[NASA-CASE-NPO-15465-1] c 34 N84-22903  
Method and apparatus for precision control of radiometer  
[NASA-CASE-NPO-15398-1] c 35 N84-22931  
Spectrophone stabilized laser with line center offset frequency control  
[NASA-CASE-NPO-15516-1] c 36 N84-22943  
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[NASA-CASE-NPO-15496-1] c 44 N84-23018  
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[NASA-CASE-NPO-15689-1] c 71 N84-23233  
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[NASA-CASE-NPO-15345-1] c 74 N84-23247  
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[NASA-CASE-NPO-16112-1] c 33 N86-19516

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Patent  
[NASA-CASE-XNP-08907] c 23 N71-29123  
Infrared detectors  
[NASA-CASE-LAR-10728-1] c 14 N73-12445  
Resistive anode image converter  
[NASA-CASE-HQN-10876-1] c 33 N78-27473  
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[NASA-CASE-MSC-14773-1] c 35 N78-12390  
Automatic multiple-sample applicator and electrophoresis apparatus  
[NASA-CASE-ARC-10991-1] c 25 N78-14104  
Process for preparing higher oxides of the alkali and alkaline earth metals  
[NASA-CASE-ARC-10992-1] c 26 N78-32229  
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[NASA-CASE-XNP-04167-2] c 25 N72-24753  
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[NASA-CASE-GSC-11394-1] c 09 N73-32109

**Chance Vought Corp., Dallas, TX.**  
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Patent  
[NASA-CASE-XLA-00189] c 33 N70-36846  
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[NASA-CASE-MFS-14253] c 33 N71-24858  
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[NASA-CASE-XMF-04132] c 15 N69-27502

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[NASA-CASE-XMS-01077-1] c 37 N79-33467

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[NASA-CASE-GSC-10668-1] c 07 N71-28430

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[NASA-CASE-MSC-12389] c 33 N71-29052
- Infinite range electronics gain control circuit  
[NASA-CASE-GSC-10786-1] c 10 N72-28241
- Colorado State Univ., Fort Collins.**  
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[NASA-CASE-LEW-12465-1] c 25 N78-25148
- Comprehensive Designers, Inc., Sherman Oaks, CA.**  
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[NASA-CASE-NPO-11366] c 11 N73-26238
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[NASA-CASE-XNP-06032] c 09 N69-21826
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[NASA-CASE-MFS-23862-1] c 48 N80-18667
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[NASA-CASE-GSC-12808-1] c 25 N85-21279
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[NASA-CASE-ARC-11372-1] c 08 N86-27288
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[NASA-CASE-MSC-12280] c 27 N71-16348
- Consolidated Controls Corp., El Segundo, CA.**  
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[NASA-CASE-MSC-18106-1] c 33 N82-11357
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[NASA-CASE-XGS-01881] c 09 N70-40123
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[NASA-CASE-MFS-20830] c 15 N71-30028
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[NASA-CASE-LAR-11027-1] c 35 N74-18088
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[NASA-CASE-HQN-10638-1] c 15 N73-30460
- Department of Transportation, Cambridge, MA.**  
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[NASA-CASE-MSC-12640-1] c 74 N76-31988
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[NASA-CASE-XMS-04312] c 07 N71-22984
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- Split nut separation system Patent  
[NASA-CASE-XNP-06914] c 15 N71-21489
- Artificial gravity spin deployment system Patent  
[NASA-CASE-XNP-02595] c 31 N71-21881
- Portable superclean air column device Patent  
[NASA-CASE-XMF-03212] c 15 N71-22721
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- Collapse pistons  
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- Duke Univ., Durham, NC.**  
Regulated dc-to-dc converter for voltage step-up or step-down with input-output isolation  
[NASA-CASE-HQN-10782-1] c 33 N74-11049
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High contrast cathode ray tube  
[NASA-CASE-ERC-10468] c 09 N72-20206
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[NASA-CASE-GSC-12812-1] c 34 N83-35307

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[NASA-CASE-XNP-02899-1] c 33 N79-21265
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[NASA-CASE-XNP-01263-2] c 15 N71-26312
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- Electric Storage Battery Co., Raleigh, NC.**  
Electric battery and method for operating same Patent  
[NASA-CASE-XGS-01674] c 03 N71-29129
- Storage battery comprising negative plates of a wedge shaped configuration  
[NASA-CASE-NPO-11806-1] c 44 N74-19693
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[NASA-CASE-XNP-03332] c 09 N71-10618
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[NASA-CASE-XLE-04526] c 03 N71-11052
- Method of producing refractory bodies having controlled porosity Patent  
[NASA-CASE-LEW-10393-1] c 17 N71-15468
- Soil particles separator, collector and viewer Patent  
[NASA-CASE-XNP-09770] c 15 N71-20440
- Particle detection apparatus including a ballistic pendulum Patent  
[NASA-CASE-XMS-04201] c 14 N71-22990
- Polarity sensitive circuit Patent  
[NASA-CASE-XNP-00952] c 10 N71-23271
- Ion engine casing construction and method of making same Patent  
[NASA-CASE-XNP-06942] c 28 N71-23293
- Material handling device Patent  
[NASA-CASE-XNP-09770-3] c 11 N71-27036
- Screen particle separator  
[NASA-CASE-XNP-09770-2] c 15 N72-22483
- Electronic Image Systems Corp., Cambridge, MA.**  
Drying apparatus for photographic sheet material  
[NASA-CASE-GSC-11074-1] c 14 N73-28489
- Essex Corp., Huntville, AL.**  
Satellite retrieval system  
[NASA-CASE-MFS-25403-1] c 18 N83-29303
- Ewen Knight Corp., East Natick, MA.**  
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- Two axis fluxgate magnetometer Patent  
[NASA-CASE-GSC-10441-1] c 14 N71-27325
- Space simulation and radiative property testing system and method Patent  
[NASA-CASE-MFS-20096] c 14 N71-30026
- Thermal control system for a spacecraft modular housing  
[NASA-CASE-GSC-11018-1] c 31 N73-30829
- Fairchild Republic Co., Farmingdale, NY.**  
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[NASA-CASE-MSC-18422-1] c 37 N82-18408
- Faraday Labs, Inc., La Jolla, CA.**  
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[NASA-CASE-MFS-23405-1] c 26 N77-29260
- Federal-Mogul Corp., Los Alamitos, CA.**  
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[NASA-CASE-XNP-07659] c 06 N71-22975
- Florida Univ., Gainesville.**  
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[NASA-CASE-HQN-10888-1] c 44 N79-14527
- FMC Corp., New York, NY.**  
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[NASA-CASE-XMS-00583] c 28 N70-38504
- Foothill Coll., Los Altos Hills, CA.**  
Electrical conductivity cell and method for fabricating the same  
[NASA-CASE-ARC-10810-1] c 33 N76-18339
- Ford Motor Co., Dearborn, MI.**  
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[NASA-CASE-HQN-10780] c 14 N71-30265

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## Garrett Corp., Los Angeles, CA.

- Relief valve  
[NASA-CASE-XMS-05894-1] c 15 N69-21924
- Portable environmental control system Patent  
[NASA-CASE-XMS-09632-1] c 05 N71-11203
- Dual latching solenoid valve Patent  
[NASA-CASE-XMS-05890] c 09 N71-23181
- Water management system and an electrolytic cell therefor Patent  
[NASA-CASE-MSC-10960-1] c 03 N71-24718
- Low cycle fatigue testing machine  
[NASA-CASE-LAR-10270-1] c 32 N72-25877
- Process for separation of dissolved hydrogen from water by use of palladium and process for coating palladium with palladium black  
[NASA-CASE-MSC-13335-1] c 06 N72-31140
- Flexible joint for pressurizable garment  
[NASA-CASE-MSC-11072] c 54 N74-32548
- Gas compression apparatus  
[NASA-CASE-MSC-14757-1] c 35 N78-10428
- Wind tunnel  
[NASA-CASE-LAR-10135-1] c 09 N79-21083
- Water separator  
[NASA-CASE-XMS-01295-1] c 37 N79-21345
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Adaptive reference voltage generator for firing angle control of line-commutated inverters  
[NASA-CASE-MFS-25215-1] c 33 N83-31953
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[NASA-CASE-LAR-10180-1] c 06 N71-13481
- General Dynamics/Astronautics, San Diego, CA.**  
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[NASA-CASE-XNP-02588] c 15 N71-18613
- Pressure transducer calibrator Patent  
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[NASA-CASE-XNP-04148] c 17 N71-24830
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[NASA-CASE-XNP-05612] c 09 N69-21468
- Separation nut Patent  
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- Zero gravity separator Patent  
[NASA-CASE-XLE-00586] c 15 N71-15968
- Catalyst cartridge for carbon dioxide reduction unit  
[NASA-CASE-LAR-10551-1] c 25 N74-12813
- Heat exchanger  
[NASA-CASE-MFS-22991-1] c 34 N77-10463
- General Dynamics Corp., San Diego, CA.**  
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[NASA-CASE-XNP-03930] c 14 N69-24331
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[NASA-CASE-XFR-07658-1] c 05 N71-26293
- Driving lamps by induction  
[NASA-CASE-MFS-21214-1] c 09 N73-30181
- General Electric Co., Cincinnati, OH.**  
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[NASA-CASE-LEW-12419-1] c 07 N77-14025
- Reverse pitch fan with divided splitter  
[NASA-CASE-LEW-12760-1] c 07 N77-17059
- Leading edge protection for composite blades  
[NASA-CASE-LEW-12550-1] c 24 N77-19170
- Oil cooling system for a gas turbine engine  
[NASA-CASE-LEW-12630-1] c 07 N77-23106
- Blade retainer assembly  
[NASA-CASE-LEW-12608-1] c 07 N77-27116
- Platform for a swing root turbomachinery blade  
[NASA-CASE-LEW-12312-1] c 07 N77-32148
- Deformable bearing seat  
[NASA-CASE-LEW-12527-1] c 37 N77-32500
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- Impact absorbing blade mounts for variable pitch blades  
[NASA-CASE-LEW-12313-1] c 37 N78-10468
- Variable thrust nozzle for quiet turbofan engine and method of operating same  
[NASA-CASE-LEW-12317-1] c 07 N78-17055
- Gas turbine engine with convertible accessories  
[NASA-CASE-LEW-12390-1] c 07 N78-17056
- Variable cycle gas turbine engines  
[NASA-CASE-LEW-12916-1] c 37 N78-17384
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[NASA-CASE-LEW-12452-1] c 07 N78-25089
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[NASA-CASE-LEW-12496-1] c 07 N78-33101

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[NASA-CASE-LEW-12793-1] c 37 N79-11403

Integrated gas turbine engine-nacelle  
[NASA-CASE-LEW-12389-3] c 07 N79-14096

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[NASA-CASE-LEW-12378-1] c 07 N79-14097

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[NASA-CASE-LEW-12658-1] c 71 N79-14871

Method and apparatus for rapid thrust increases in a turbofan engine  
[NASA-CASE-LEW-12971-1] c 07 N80-18039

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[NASA-CASE-LEW-13201-1] c 07 N81-14999

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[NASA-CASE-LEW-12907-2] c 07 N81-19115

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[NASA-CASE-LEW-12594-2] c 07 N81-19116

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[NASA-CASE-LEW-13199-1] c 07 N82-26293

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[NASA-CASE-LEW-14586-1] c 07 N83-31603

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[NASA-CASE-LEW-13142-1] c 07 N83-36029

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[NASA-CASE-LEW-13524-1] c 07 N84-33410

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[NASA-CASE-XGS-02011] c 15 N71-20739

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[NASA-CASE-MSC-13917-1] c 05 N72-15098

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[NASA-CASE-NPO-13160-1] c 35 N74-18090

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[NASA-CASE-MFS-21395-1] c 25 N74-26948

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[NASA-CASE-MFS-21394-1] c 34 N74-27744

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[NASA-CASE-MSC-13601-2] c 54 N75-27759

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[NASA-CASE-LEW-10219-1] c 18 N71-28729

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[NASA-CASE-ARC-10266-1] c 33 N75-29318

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[NASA-CASE-GSC-11514-1] c 03 N72-24037

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[NASA-CASE-XLA-04622] c 03 N70-41580

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[NASA-CASE-MFS-14023] c 33 N71-25351

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[NASA-CASE-MSC-14771-1] c 54 N77-32722

Cell and method for electrolysis of water and anode  
[NASA-CASE-MSC-16394-1] c 28 N81-24280

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[NASA-CASE-XNP-04339] c 17 N71-29137  
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- ILC Technology, Inc., Sunnyvale, CA**  
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- Institute for Research, Inc., Houston, TX**  
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- Institute of Research and Instrumentation, Houston, TX**  
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Cavity radiometer Patent [NASA-CASE-XNP-08961]	c 14	N71-24809						
High-gain, broadband traveling wave maser Patent [NASA-CASE-NPO-10548]	c 16	N71-24831						

Current steering commutator  
[NASA-CASE-NPO-10743] c 08 N72-21199

Automated equipotential plotter  
[NASA-CASE-NPO-11134] c 09 N72-21246

Pressure transducer  
[NASA-CASE-NPO-10832] c 14 N72-21405

Positioning mechanism  
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Solid state matrices  
[NASA-CASE-NPO-10591] c 03 N72-22041

Solar cell panels with light transmitting plate  
[NASA-CASE-NPO-10747] c 03 N72-22042

Data multiplexer using tree switching configuration  
[NASA-CASE-NPO-11333] c 08 N72-22162

System for quantizing graphic displays  
[NASA-CASE-NPO-10745] c 08 N72-22164

Digital function generator  
[NASA-CASE-NPO-11104] c 08 N72-22165

Analog-to-digital converter analyzing system  
[NASA-CASE-NPO-10560] c 08 N72-22166

Feedback shift register with states decomposed into cycles of equal length  
[NASA-CASE-NPO-11082] c 08 N72-22167

Self-obtaining, gas operated launcher  
[NASA-CASE-NPO-11013] c 11 N72-22247

Optical binocular scanning apparatus  
[NASA-CASE-NPO-11002] c 14 N72-22441

Ionene membrane separator  
[NASA-CASE-NPO-11091] c 18 N72-22567

Deployable solar cell array  
[NASA-CASE-NPO-10883] c 31 N72-22874

Thermal to electrical power conversion system with solid-state switches with Seebeck effect compensation  
[NASA-CASE-NPO-11388] c 03 N72-23048

Optical frequency waveguide and transmission system  
[NASA-CASE-NPO-10541-3] c 23 N72-23695

Bipropellant injector  
[NASA-CASE-NPO-09461] c 28 N72-23809

Solid propellant rocket motor nozzle  
[NASA-CASE-NPO-11458] c 28 N72-23810

Analysis of hydrogen-deuterium mixtures  
[NASA-CASE-NPO-11322] c 06 N72-25146

Flexible computer accessed telemetry  
[NASA-CASE-NPO-11358] c 07 N72-25172

Multi-purpose antenna employing dish reflector with plural coaxial horn feeds  
[NASA-CASE-NPO-11264] c 07 N72-25174

Communications link for computers  
[NASA-CASE-NPO-11161] c 08 N72-25207

Method and apparatus for frequency-division multiplex communications by digital phase shift of carrier  
[NASA-CASE-NPO-11338] c 08 N72-25208

Binary coded sequential acquisition ranging system  
[NASA-CASE-NPO-11194] c 08 N72-25209

MOD 2 sequential function generator for multibit binary sequence  
[NASA-CASE-NPO-10836] c 08 N72-25210

Digital video display system using cathode ray tube  
[NASA-CASE-NPO-11342] c 09 N72-25248

Inverter oscillator with voltage feedback  
[NASA-CASE-NPO-10760] c 09 N72-25254

Thermal motor  
[NASA-CASE-NPO-11283] c 09 N72-25260

Two phase flow system with discrete impinging two-phase jets  
[NASA-CASE-NPO-11556] c 12 N72-25292

Atmospheric sampling devices  
[NASA-CASE-NPO-11373] c 13 N72-25323

Light sensor  
[NASA-CASE-NPO-11311] c 14 N72-25414

Quick disconnect coupling  
[NASA-CASE-NPO-11202] c 15 N72-25450

Coaxial injector for reaction motors  
[NASA-CASE-NPO-11095] c 15 N72-25455

Ball screw linear actuator  
[NASA-CASE-NPO-11222] c 15 N72-25456

Helium refrigerator and method for decontaminating the refrigerator  
[NASA-CASE-NPO-10634] c 23 N72-25619

Uninsulated in-core thermionic diode  
[NASA-CASE-NPO-10542] c 09 N72-27228

Audio frequency marker system  
[NASA-CASE-NPO-11147] c 14 N72-27408

Light direction sensor  
[NASA-CASE-NPO-11201] c 14 N72-27409

Adjustable support  
[NASA-CASE-NPO-10721] c 15 N72-27484

Method for controlling vapor content of a gas  
[NASA-CASE-NPO-10633] c 03 N72-28025

Maser for frequencies in the 7-20 GHz range  
[NASA-CASE-NPO-11437] c 16 N72-28521

Thin film temperature sensor and method of making same  
[NASA-CASE-NPO-11775] c 26 N72-28761

Circularly polarized antenna  
[NASA-CASE-ERC-10214] c 09 N72-31235

Singly-curved reflector for use in high-gain antennas  
[NASA-CASE-NPO-11361] c 07 N72-32169

Digital slope threshold data compressor  
[NASA-CASE-NPO-11630] c 08 N72-33172

Continuously variable voltage controlled phase shifter  
[NASA-CASE-NPO-11129] c 09 N72-33204

Pseudonoise sequence generators with three tap linear feedback shift registers  
[NASA-CASE-NPO-11406] c 08 N73-12175

Versatile arithmetic unit for high speed sequential decoder  
[NASA-CASE-NPO-11371] c 08 N73-12177

Dual frequency microwave reflex feed  
[NASA-CASE-NPO-13091-1] c 09 N73-12214

Audio system with means for reducing noise effects  
[NASA-CASE-NPO-11631] c 10 N73-12244

Interferometer-polarimeter  
[NASA-CASE-NPO-11239] c 14 N73-12446

Irradiance measuring device  
[NASA-CASE-NPO-11493] c 14 N73-12447

Program for computer aided reliability estimation  
[NASA-CASE-NPO-13086-1] c 15 N73-12495

Apparatus for deriving synchronizing pulses from pulses in a single channel PCM communications system  
[NASA-CASE-NPO-11302-1] c 07 N73-13149

Rotary vane attenuator wherein rotor has orthogonally disposed resistive and dielectric cards  
[NASA-CASE-NPO-11418-1] c 14 N73-13420

Gas flow control device  
[NASA-CASE-NPO-11479] c 15 N73-13462

Electrolytic gas operated actuator  
[NASA-CASE-NPO-11369] c 15 N73-13467

Dual purpose momentum wheels for spacecraft with magnetic recording  
[NASA-CASE-NPO-11481] c 21 N73-13644

Multiple reflection conical microwave antenna  
[NASA-CASE-NPO-11661] c 07 N73-14130

Cyclically operable optical shutter  
[NASA-CASE-NPO-10758] c 14 N73-14427

Heat detection and compositions and devices therefor  
[NASA-CASE-NPO-10764-1] c 14 N73-14428

Parallel-plate viscometer with double diaphragm suspension  
[NASA-CASE-NPO-11387] c 14 N73-14429

Rotary actuator  
[NASA-CASE-NPO-10680] c 31 N73-14855

Magnetically actuated tuning method for Gunn oscillators  
[NASA-CASE-NPO-12106] c 09 N73-15235

Multichannel telemetry system  
[NASA-CASE-NPO-11572] c 07 N73-16121

Data-aided carrier tracking loops  
[NASA-CASE-NPO-11282] c 10 N73-16205

Stacked solar cell arrays  
[NASA-CASE-NPO-11771] c 03 N73-20040

A m-ary linear feedback shift register with binary logic  
[NASA-CASE-NPO-11868] c 10 N73-20254

Apparatus for recovering matter adhered to a host surface  
[NASA-CASE-NPO-11213] c 15 N73-20514

Scan converting video tape recorder  
[NASA-CASE-NPO-10166-1] c 07 N73-22076

Collapsible structure for an antenna reflector  
[NASA-CASE-NPO-11751] c 07 N73-24176

Pump for delivering heated fluids  
[NASA-CASE-NPO-11417] c 15 N73-24513

Ion thruster with a combination keeper electrode and electron baffle  
[NASA-CASE-NPO-11880] c 28 N73-24783

Solid propellant rocket motor  
[NASA-CASE-NPO-11559] c 28 N73-24784

Code regenerative clean-up loop transponder for a mu-type ranging system  
[NASA-CASE-NPO-11707] c 07 N73-25161

Numerical computer peripheral interactive device with manual controls  
[NASA-CASE-NPO-11497] c 08 N73-25206

Radiant source tracker independent of nonconstant irradiance  
[NASA-CASE-NPO-11686] c 14 N73-25462

Two carrier communication system with single transmitter  
[NASA-CASE-NPO-11548] c 07 N73-26118

High pulse rate high resolution optical radar system  
[NASA-CASE-NPO-11426] c 07 N73-26119

Counting digital filters  
[NASA-CASE-NPO-11821-1] c 08 N73-26175

Automated attendance accounting system  
[NASA-CASE-NPO-11456] c 08 N73-26176

Low phase noise digital frequency divider  
[NASA-CASE-NPO-11569] c 10 N73-26229

Vehicle for use in planetary exploration  
[NASA-CASE-NPO-11366] c 11 N73-26238

Temperature control system with a pulse width modulated bridge  
[NASA-CASE-NPO-11304] c 14 N73-26430

Disconnect unit  
[NASA-CASE-NPO-11330] c 33 N73-26958

Filter for third order phase locked loops  
[NASA-CASE-NPO-11941-1] c 10 N73-27171

Receiver with an improved phase lock loop in a multichannel telemetry system with suppressed carrier  
[NASA-CASE-NPO-11593-1] c 07 N73-28012

Analog-to-digital converter  
[NASA-CASE-NPO-00477] c 08 N73-28045

Pseudonoise (PN) synchronization of data system with derivation of clock frequency from received signal for clocking receiver PN generator  
[NASA-CASE-NPO-03623] c 09 N73-28084

Apparatus and method for measuring the Seebeck coefficient and resistivity of materials  
[NASA-CASE-NPO-11749] c 14 N73-28486

Dual purpose optical instrument capable of simultaneously acting as spectrometer and diffractometer  
[NASA-CASE-NPO-05231] c 14 N73-28491

Continuous magnetic flux pump  
[NASA-CASE-NPO-01187] c 15 N73-28516

Preparation of alkali metal dispersions  
[NASA-CASE-NPO-08876] c 17 N73-28573

Superconductive magnetic-field-trapping device  
[NASA-CASE-NPO-01185] c 26 N73-28710

Automatic carrier acquisition system  
[NASA-CASE-NPO-11628-1] c 07 N73-30113

Ferrofluidic solenoid  
[NASA-CASE-NPO-11738-1] c 09 N73-30185

Silent emergency alarm system for schools and the like  
[NASA-CASE-NPO-11307-1] c 10 N73-30205

RF-source resistance meters  
[NASA-CASE-NPO-11291-1] c 14 N73-30388

Event sequence detector  
[NASA-CASE-NPO-11703-1] c 10 N73-32144

Soil penetrometer  
[NASA-CASE-NPO-05530] c 14 N73-32321

Quadrupole mass filter with means to generate a noise spectrum exclusive of the resonant frequency of the desired ions to deflect stable ions  
[NASA-CASE-NPO-04231] c 14 N73-32325

Magnetic-flux pump  
[NASA-CASE-NPO-01188] c 15 N73-32361

Burrowing apparatus  
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Electrostatically controlled heat shutter  
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Method and apparatus for a single channel digital communications system  
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Controlled oscillator system with a time dependent output frequency  
[NASA-CASE-NPO-11962-1] c 33 N74-10194

Low loss dichroic plate  
[NASA-CASE-NPO-13171-1] c 32 N74-11000

Image data rate converter having a drum with a fixed head and a rotatable head  
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Monitoring atmospheric pollutants with a heterodyne radiometer transmitter-receiver  
[NASA-CASE-NPO-11918-1] c 35 N74-11284

Digital second-order phase-locked loop  
[NASA-CASE-NPO-11905-1] c 33 N74-12887

Automatic vehicle location system  
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Thermomagnetic recording and magneto-optic playback system having constant intensity laser beam control  
[NASA-CASE-NPO-11317-2] c 36 N74-13205

Use of thin film light detector  
[NASA-CASE-NPO-11432-2] c 35 N74-15090

Temperature compensated digital inertial sensor  
[NASA-CASE-NPO-13044-1] c 35 N74-15094

Compact hydrogenator  
[NASA-CASE-NPO-11682-1] c 35 N74-15127

Short range laser obstacle detector  
[NASA-CASE-NPO-11856-1] c 36 N74-15145

System for stabilizing cable phase delay utilizing a coaxial cable under pressure  
[NASA-CASE-NPO-13138-1] c 33 N74-17927

Storage battery comprising negative plates of a wedge shaped configuration  
[NASA-CASE-NPO-11806-1] c 44 N74-19693

Gated compressor, distortionless signal limiter  
[NASA-CASE-NPO-11820-1] c 32 N74-19788

Apparatus for scanning the surface of a cylindrical body  
[NASA-CASE-NPO-11861-1] c 36 N74-20009

Decision feedback loop for tracking a polyphase modulated carrier  
[NASA-CASE-NPO-13103-1] c 32 N74-20811

Optically actuated two position mechanical mover  
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Thin film gauge  
[NASA-CASE-NPO-10617-1] c 35 N74-22095

- High isolation RF signal selection switches  
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- Single reflector interference spectrometer and drive system therefor  
[NASA-CASE-NPO-11932-1] c 35 N74-23040
- Scanning nozzle plating system  
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- Rock sampling  
[NASA-CASE-NXP-10007-1] c 46 N74-23068
- Rock sampling  
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- Miniature multichannel biotelemetry system  
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- Dispensing targets for ion beam particle generators  
[NASA-CASE-NPO-13112-1] c 73 N74-26767
- Optically detonated explosive device  
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- Coherent receiver employing nonlinear coherence detection for carrier tracking  
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- Digital servo control of random sound test excitation  
[NASA-CASE-NPO-11623-1] c 71 N74-31148
- Apparatus for forming drive belts  
[NASA-CASE-NPO-13205-1] c 31 N74-32817
- Tool for use in lifting pin supported objects  
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- Preparing oxidizer coated metal fuel particles  
[NASA-CASE-NPO-11975-1] c 28 N74-33209
- Geneva mechanism  
[NASA-CASE-NPO-13281-1] c 37 N75-13266
- Method of producing a storage bulb for an atomic hydrogen maser  
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- Combined pressure regulator and shutoff valve  
[NASA-CASE-NPO-13201-1] c 37 N75-15050
- Simultaneous acquisition of tracking data from two stations  
[NASA-CASE-NPO-13292-1] c 32 N75-15854
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[NASA-CASE-NPO-13253-1] c 37 N75-18573
- System for generating timing and control signals  
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- Motor run-up system  
[NASA-CASE-NPO-13374-1] c 33 N75-19524
- Deep trap, laser activated image converting system  
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- Multitarget sequential sputtering apparatus  
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- Heat operated cryogenic electrical generator  
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- System for interference signal nulling by polarization adjustment  
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- Heat detection and compositions and devices therefor  
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- Servo-controlled intravital microscope system  
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- Vehicle locating system utilizing AM broadcasting station carriers  
[NASA-CASE-NPO-13217-1] c 32 N75-26194
- Asynchronous, multiplexing, single line transmission and recovery data system  
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- Fluorescence detector for monitoring atmospheric pollutants  
[NASA-CASE-NPO-13231-1] c 45 N75-27585
- Cooperative multi-axis sensor for teleoperation of article manipulating apparatus  
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- Heat sterilizable patient ventilator  
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- Refrigerated coaxial coupling  
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- Electric power generation system directory from laser power  
[NASA-CASE-NPO-13308-1] c 36 N75-30524
- Subminiature insertable force transducer  
[NASA-CASE-NPO-13423-1] c 33 N75-31329
- Symmetrical odd-modulus frequency divider  
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- Stored charge transistor  
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- Doped Josephson tunneling junction for use in a sensitive IR detector  
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- Acoustically controlled distributed feedback laser  
[NASA-CASE-NPO-13175-1] c 36 N75-31427
- Inert gas metallic vapor laser  
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- Helium refrigerator  
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- Nonlinear nonsingular feedback shift registers  
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- Strain gage mounting assembly  
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- Thermostatically controlled non-tracking type solar energy concentrator  
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- Multi-computer multiple data path hardware exchange system  
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- Dichroic plate  
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- Magnetometer using superconducting rotating body  
[NASA-CASE-NPO-13388-1] c 35 N76-16390
- Scan converting video tape recorder  
[NASA-CASE-NPO-10166-2] c 35 N76-16391
- Hydrogen rich gas generator  
[NASA-CASE-NPO-13342-1] c 37 N76-16446
- Automated system for identifying traces of organic chemical compounds in aqueous solutions  
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- Analog to digital converter  
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- Sampler of gas borne particles  
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- Stark-effect modulation of CO<sub>2</sub> laser with NH<sub>2</sub>D  
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- Diffused waveguiding capillary tube with distributed feedback for a gas laser  
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- System for minimizing internal combustion engine pollution emission  
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- Hydrogen-bromine secondary battery  
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- Hydrogen-rich gas generator  
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- Zinc-halide battery with molten electrolyte  
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- Priority interrupt system  
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- Method and apparatus for measurement of trap density and energy distribution in dielectric films  
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- Indicator providing continuous indication of the presence of a specific pollutant in air  
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- Method and apparatus for generating coherent radiation in the ultra-violet region and above by use of distributed feedback  
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- Hydrogen rich gas generator  
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- Myocardium wall thickness transducer and measuring method  
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- Catheter tip force transducer for cardiovascular research  
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- Real time analysis of voiced sounds  
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- High resolution Fourier interferometer-spectrophotopolarimeter  
[NASA-CASE-NPO-13604-1] c 35 N76-31490
- Reflected-wave maser  
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- Method of making hollow elastomeric bodies  
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- Solar cell grid patterns  
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- Furlable antenna  
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- Annular arc accelerator shock tube  
[NASA-CASE-NPO-13528-1] c 09 N77-10071
- Cryostat system for temperatures on the order of 2 deg K or less  
[NASA-CASE-NPO-13459-1] c 31 N77-10229
- The dc-to-dc converters employing staggered-phase power switches with two-loop control  
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- Ion and electron detector for use in an ICR spectrometer  
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Method of preparing water purification membranes  
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[NASA-CASE-GSC-11746-1] c 36 N75-19654

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[NASA-CASE-MFS-22758-1] c 70 N75-26789

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- Optically selective, acoustically resonant gas detecting transducer  
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- Intumescent coatings containing 4,4'-dinitrosulfanilide  
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- Automatic multiple-sample applicator and electrophoresis apparatus  
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- Flow separation detector  
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- Synthesis of polyformals  
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- Carboranylcyclotriphosphazenes and their polymers  
[NASA-CASE-ARC-11176-1] c 27 N82-18389
- Use of glow discharge in fluidized beds  
[NASA-CASE-ARC-11245-1] c 28 N82-18401
- Clutchless multiple drive source for output shaft  
[NASA-CASE-ARC-11325-1] c 37 N82-22496
- Environmental fog/rain visual display system for aircraft simulators  
[NASA-CASE-ARC-11158-1] c 09 N82-24212
- High acceleration cable deployment system  
[NASA-CASE-ARC-11256-1] c 15 N82-24272
- The 1,1,1-triaryl-2,2,2-trifluoroethanes and process for their synthesis  
[NASA-CASE-ARC-11097-1] c 25 N82-24312
- Preparation of crosslinked 1,2,4-oxadiazole polymer  
[NASA-CASE-ARC-11253-2] c 27 N82-24338
- Adjustable high emittance gap filler  
[NASA-CASE-ARC-11310-1] c 27 N82-24339
- Test apparatus for locating shorts during assembly of electrical buses  
[NASA-CASE-ARC-11116-1] c 33 N82-24420
- Spray coating apparatus having a rotatable workpiece holder  
[NASA-CASE-ARC-11110-1] c 37 N82-24492
- Pressure suit joint analyzer  
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- Preparation of perfluorinated 1,2,4-oxadiazoles  
[NASA-CASE-ARC-11267-2] c 23 N82-28353
- High performance channel injection sealant invention abstract  
[NASA-CASE-ARC-14408-1] c 27 N82-33523
- Rhomboid prism pair for rotating the plane of parallel light beams  
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- Dual-beam skin friction interferometer  
[NASA-CASE-ARC-11354-1] c 74 N83-21949
- Method of carbonizing polyacrylonitrile fibers  
[NASA-CASE-ARC-11261-1] c 24 N83-25789
- Method for detecting coliform organisms  
[NASA-CASE-ARC-11322-1] c 51 N83-28849
- Non-invasive method and apparatus for measuring pressure within a pliable vessel  
[NASA-CASE-ARC-11264-2] c 52 N83-29991
- Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-1] c 27 N83-31854
- Noise suppressor for turbo fan jet engines  
[NASA-CASE-ARC-10812-1] c 07 N83-33884
- Synthesis of dawsonites  
[NASA-CASE-ARC-11326-1] c 25 N83-33977
- Method of tracing contour patterns for use in making gradual contour resin matrix composites  
[NASA-CASE-ARC-11246-1] c 31 N83-34073
- Scanning seismic intrusion detection method and apparatus  
[NASA-CASE-ARC-11317-1] c 35 N83-34272
- Sidelocking laser altimeter for a flight simulator  
[NASA-CASE-ARC-11312-1] c 36 N83-34304
- High temperature glass thermal control structure and coating  
[NASA-CASE-ARC-11164-1] c 44 N83-34448
- Fire extinguishant materials  
[NASA-CASE-ARC-11252-1] c 25 N83-36118
- Fluoroether modified epoxy composites  
[NASA-CASE-ARC-11418-1] c 24 N84-11213
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[NASA-CASE-ARC-11426-1] c 09 N84-12193
- Elastomer-modified phosphorus-containing imide resins  
[NASA-CASE-ARC-11400-1] c 27 N84-14322
- Space station architecture, module, berthing hub, shell assembly, berthing mechanism and utility connection channel  
[NASA-CASE-ARC-11505-1] c 18 N84-22612
- Process for preparing perfluorotriazine elastomers and precursors thereof  
[NASA-CASE-ARC-11402-1] c 27 N84-22744
- Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-3] c 27 N84-22745
- Carboranylmethylenesubstituted phosphazenes and polymers thereof  
[NASA-CASE-ARC-11370-1] c 27 N84-22750
- Electronic scanning pressure measuring system and transducer package  
[NASA-CASE-ARC-11361-1] c 35 N84-22934
- Metal phthalocyanine polymers  
[NASA-CASE-ARC-11405-1] c 27 N84-27884
- Method for the preparation of thin-skinned asymmetric reverse osmosis membranes and products thereof  
[NASA-CASE-ARC-11359-1] c 51 N84-28361
- Fire blocking systems for aircraft seat cushions  
[NASA-CASE-ARC-11423-1] c 03 N84-33394
- Phosphorus-containing imide resins  
[NASA-CASE-ARC-11368-2] c 27 N85-21347
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[NASA-CASE-ARC-11413-1] c 27 N85-21348
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[NASA-CASE-ARC-11444-1] c 05 N85-29947
- Synthesis of 2,4,8,10-tetroxaspiro5,5undecane  
[NASA-CASE-ARC-11243-2] c 23 N85-33187
- Fire-resistant phosphorus containing polyimides and copolyimides  
[NASA-CASE-ARC-11522-2] c 27 N85-34280
- Metal (2) 4,4',4'',4''' phthalocyanine tetraamines as curing agents for epoxy resins  
[NASA-CASE-ARC-11424-1] c 27 N85-34281
- Modulated voltage metastable ionization detector  
[NASA-CASE-ARC-11503-1] c 35 N85-34374
- Maleimide substituted aromatic cyclotriphosphazenes  
[NASA-CASE-ARC-11428-1] c 23 N86-19376
- Toughening reinforced epoxy composites with brominated polymeric additives  
[NASA-CASE-ARC-11427-1] c 24 N86-19380
- Metal phthalocyanine intermediates for the preparation of polymers  
[NASA-CASE-ARC-11405-2] c 27 N86-19455
- Optical system with reflective baffles  
[NASA-CASE-ARC-11502-1] c 74 N86-20125
- Copolymers of vinyl styrylpyridines or vinyl stilbazoles with bismaleimide  
[NASA-CASE-ARC-11429-1-CU] c 27 N86-20560
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[NASA-CASE-ARC-11422-1] c 35 N86-20751



Segmented tubular cushion springs and spring assembly  
[NASA-CASE-ARC-11349-1] c 37 N86-20797

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[NASA-CASE-ARC-11402-3] c 23 N86-21582

High performance mixed bisimide resins and composites based thereon  
[NASA-CASE-ARC-11538-1SB] c 24 N86-21590

Laminate comprising fibers embedded in cured amine terminated bis-imide  
[NASA-CASE-ARC-11421-3] c 24 N86-25416

Thumb-actuated two-axis controller  
[NASA-CASE-ARC-11372-1] c 08 N86-27288

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[NASA-CASE-ARC-11616-1] c 54 N86-28618

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[NASA-CASE-ARC-11610-1] c 54 N86-28619

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[NASA-CASE-ARC-11543-1] c 54 N86-28620

Shoulder and hip joints for hard space suits and the like  
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[NASA-CASE-ARC-11421-2] c 27 N86-31726

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[NASA-CASE-ARC-11504-1] c 09 N86-32447

Polymer of phosphonylmethyl-2,4- and -2,6-diamino benzene and polyfunctional monomer  
[NASA-CASE-ARC-11506-2] c 23 N86-32525

Fire resistant polyamide based on 1-(diorganoxyphosphonyl)methyl-2,4- and -2,6-diamino benzene  
[NASA-CASE-ARC-11512-2] c 27 N86-32568

Spinning disk calibration method and apparatus for laser Doppler velocimeter  
[NASA-CASE-ARC-11510-1] c 35 N86-32697

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[NASA-CASE-ARC-11429-4CU] c 27 N87-15304

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[NASA-CASE-ARC-11429-3CU] c 27 N87-16908

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[NASA-CASE-ARC-11428-2] c 27 N87-16909

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[NASA-CASE-ARC-11363-1] c 31 N87-16918

Projection lens scanning laser velocimeter system  
[NASA-CASE-ARC-11547-1] c 36 N87-17026

Process for preparing phthalocyanine polymer from imide containing bisphthalonitrile  
[NASA-CASE-ARC-11511-2] c 27 N87-21112

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[NASA-CASE-ARC-11631-1] c 34 N87-21255

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[NASA-CASE-ARC-11429-2CU] c 27 N87-22845

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[NASA-CASE-ARC-11633-1] c 08 N87-23631

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[NASA-CASE-ARC-11643-1SB] c 23 N87-23698

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[NASA-CASE-ARC-11652-1] c 27 N87-23737

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[NASA-CASE-ARC-11533-1] c 27 N87-23751

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[NASA-CASE-ARC-11533-3] c 27 N87-24564

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[NASA-CASE-ARC-11646-1] c 14 N87-25344

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[NASA-CASE-ARC-11548-1] c 27 N87-25469

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[NASA-CASE-ARC-11620-1] c 37 N87-25573

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[NASA-CASE-NPO-16808-1CU] c 76 N87-25868

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[NASA-CASE-ARC-11611-1] c 74 N87-28416

The 1-((diorganoxy phosphonyl) methyl)-2,4- and -2,6-diamino benzenes and their derivatives  
[NASA-CASE-ARC-11425-2] c 23 N87-28605

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[NASA-CASE-ARC-11613-1] c 33 N87-28833

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[NASA-CASE-ARC-11634-1] c 36 N88-14350

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[NASA-CASE-ARC-11622-1] c 44 N88-14492

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[NASA-CASE-ARC-11641-1] c 24 N88-18628

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[NASA-CASE-ARC-11428-3] c 23 N88-24692

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[NASA-CASE-ARC-11636-1] c 05 N88-28914

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[NASA-CASE-ARC-11649-1SB] c 27 N88-29040

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[NASA-CASE-ARC-11536-1] c 33 N89-14384

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[NASA-CASE-ARC-11533-2] c 27 N89-16042

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[NASA-CASE-ARC-11426-2] c 52 N89-16256

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[NASA-CASE-ARC-11505-2] c 18 N89-25266

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[NASA-CASE-ARC-11425-4] c 23 N90-20133

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[NASA-CASE-ARC-11876-1] c 36 N90-25340

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[NASA-CASE-ERC-10187] c 16 N69-31343

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[NASA-CASE-ERC-10208] c 15 N70-10867

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- Wide range linear fluxgate magnetometer Patent  
[NASA-CASE-XGS-01587] c 14 N71-15962
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Method of detecting and counting bacteria [NASA-CASE-GSC-11917-2]	c 51	N76-28891	Thermal control canister [NASA-CASE-GSC-12253-1]	c 34	N79-31523	Separator for alkaline electric cells and method of making [NASA-CASE-GSC-10017-1]	c 44	N82-24643
Polarization compensator for optical communications [NASA-CASE-GSC-11782-1]	c 74	N76-30053	Wedge immersed thermistor bolometers [NASA-CASE-XGS-01245-1]	c 35	N79-33449	Separator for alkaline electric batteries and method of making [NASA-CASE-GSC-10018-1]	c 44	N82-24644
Static coefficient test method and apparatus [NASA-CASE-GSC-11893-1]	c 35	N76-31489	Bakeable McLeod gauge [NASA-CASE-XGS-01293-1]	c 35	N79-33450	Alkaline electrochemical cells and method of making [NASA-CASE-GSC-10349-1]	c 44	N82-24645
Digital plus analog output encoder [NASA-CASE-GSC-12115-1]	c 62	N76-31946	Fluid pressure balanced seal [NASA-CASE-XGS-01286-1]	c 37	N79-33469	Aqueous alkali metal hydroxide insoluble cellulose ether membrane [NASA-CASE-XGS-05584-1]	c 25	N82-29370
Method and apparatus for neutralizing potentials induced on spacecraft surfaces [NASA-CASE-GSC-11963-1]	c 33	N77-10429	Antenna deployment mechanism for use with a spacecraft [NASA-CASE-GSC-12331-1]	c 18	N80-14183	Implantable electrical device [NASA-CASE-GSC-12560-1]	c 52	N82-29863
Inrush current limiter [NASA-CASE-GSC-11789-1]	c 33	N77-14333	Laser apparatus [NASA-CASE-GSC-12237-1]	c 36	N80-14384	Low intensity X-ray and gamma-ray spectrometer [NASA-CASE-GSC-12587-1]	c 35	N82-32659
Linear phase demodulator including a phase locked loop with auxiliary feedback loop [NASA-CASE-GSC-12018-1]	c 33	N77-14334	Coupling device for moving vehicles [NASA-CASE-GSC-12322-1]	c 37	N80-14398	Crystal cleaving machine [NASA-CASE-GSC-12584-1]	c 37	N82-32730
Reel safety brake [NASA-CASE-GSC-11960-1]	c 37	N77-14479	Voltage feed through apparatus having reduced partial discharge [NASA-CASE-GSC-12347-1]	c 33	N80-18286	Multiprism collimator [NASA-CASE-GSC-12608-1]	c 74	N83-10900
Two-dimensional radiant energy array computers and computing devices [NASA-CASE-GSC-11839-1]	c 60	N77-14751	Distributed-switch Dicke radiometers [NASA-CASE-GSC-12219-1]	c 35	N80-18359	Massively parallel processor computer [NASA-CASE-GSC-12223-1]	c 60	N83-25378
Magnetic bearing system [NASA-CASE-GSC-11978-1]	c 37	N77-17484	Method and apparatus for slicing crystals [NASA-CASE-GSC-12291-1]	c 76	N80-18951	Variable speed drive [NASA-CASE-GSC-12643-1]	c 37	N83-26078
Method and apparatus for measuring web material wound on a reel [NASA-CASE-GSC-11902-1]	c 38	N77-17495	Diffraction grating configuration for X-ray and ultraviolet focusing [NASA-CASE-GSC-12357-1]	c 74	N80-21140	Method for milling and drilling glass [NASA-CASE-GSC-12636-1]	c 31	N83-27058
Cyclical bi-directional rotary actuator [NASA-CASE-GSC-11883-1]	c 37	N77-19458	Active nutation controller [NASA-CASE-GSC-12273-1]	c 35	N80-21719	Rapid, quantitative determination of bacteria in water [NASA-CASE-GSC-12158-1]	c 51	N83-27569
The 2 deg/90 deg laboratory scattering photometer [NASA-CASE-GSC-12088-1]	c 74	N78-13874	Method and apparatus for holding two separate metal pieces together for welding [NASA-CASE-GSC-12318-1]	c 37	N80-23655			
Transformer regulated self-stabilizing chopper [NASA-CASE-XGS-09186]	c 33	N78-17295	Method of forming a sharp edge on an optical device [NASA-CASE-GSC-12348-1]	c 74	N80-24149			
Shunt regulation electric power system [NASA-CASE-GSC-10135]	c 33	N78-17296						

Method of damping nutation motion with minimum spin axis attitude disturbance			Automatic oscillator frequency control system			Apparatus for damping operator induced oscillations of a controlled system		
[NASA-CASE-GSC-12551-1]	c 18	N83-28064	[NASA-CASE-GSC-12804-1]	c 33	N86-20668	[NASA-CASE-FRC-11041-1]	c 33	N82-18493
Automatic thermal switch			Rotatable electric cable connecting system			Power converter		
[NASA-CASE-GSC-12553-1]	c 34	N83-28356	[NASA-CASE-GSC-12899-1]	c 33	N86-20669	[NASA-CASE-FRC-11014-1]	c 33	N82-18494
Cooling by conversion of para to ortho-hydrogen			Optical multiple sample vacuum integrating sphere			Sun sensing guidance system for high altitude aircraft		
[NASA-CASE-GSC-12770-1]	c 25	N83-29324	[NASA-CASE-GSC-12849-1]	c 74	N86-26190	[NASA-CASE-FRC-11052-1]	c 04	N82-23231
Geodetic distance measuring apparatus			Wide-angle flat field telescope			Superplastically formed diffusion bonded metallic structure		
[NASA-CASE-GSC-12609-2]	c 36	N83-29681	[NASA-CASE-GSC-12825-1]	c 74	N86-28732	[NASA-CASE-FRC-11026-1]	c 24	N82-24296
Linear magnetic bearing			Multispectral linear array multiband selection device			Smoothing filter for digital to analog conversion		
[NASA-CASE-GSC-12517-1]	c 37	N83-32067	[NASA-CASE-GSC-12911-1]	c 74	N86-29650	[NASA-CASE-FRC-11025-1]	c 33	N82-24417
Interferometric angle monitor			Optical distance measuring instrument			Computer circuit card puller		
[NASA-CASE-GSC-12614-1]	c 74	N83-32577	[NASA-CASE-GSC-12761-1]	c 74	N86-32266	[NASA-CASE-FRC-11042-1]	c 60	N82-24839
Method of neutralizing the corrosive surface of amine-cured epoxy resins			Method of coating a substrate with a rapidly solidified metal			Annular wing		
[NASA-CASE-GSC-12686-1]	c 27	N83-34039	[NASA-CASE-GSC-12880-1]	c 26	N86-32550	[NASA-CASE-FRC-11007-2]	c 05	N82-26277
Active lamp pulse driver circuit			Temperature sensitive oscillator			Low-drag ground vehicle particularly suited for use in safely transporting livestock		
[NASA-CASE-GSC-12566-1]	c 33	N83-34189	[NASA-CASE-GSC-12958-1]	c 33	N86-32624	[NASA-CASE-FRC-11058-1]	c 85	N82-33288
High stability amplifier			Method of fabricating an imaging X-ray spectrometer			Aircraft canopy lock		
[NASA-CASE-GSC-12646-1]	c 33	N83-34191	[NASA-CASE-GSC-12956-1]	c 35	N87-14671	[NASA-CASE-FRC-11065-1]	c 05	N83-19737
Magnetic bearing and motor			Radial and torsionally controlled magnetic bearing			Adapter for mounting a microphone flush with the external surface of the skin of a pressurized aircraft		
[NASA-CASE-GSC-12726-1]	c 37	N83-34323	[NASA-CASE-GSC-12957-1]	c 37	N87-17038	[NASA-CASE-FRC-11072-1]	c 05	N83-27975
Heat pipe thermal switch			Low phase noise oscillator using two parallel connected amplifiers			Aircraft body-axis rotation measurement system		
[NASA-CASE-GSC-12812-1]	c 34	N83-35307	[NASA-CASE-GSC-13018-1]	c 33	N87-21232	[NASA-CASE-FRC-11043-1]	c 06	N83-33882
Focal axis resolver for offset reflector antennas			Optical scanner			National Aeronautics and Space Administration. John C. Stennis Space Center, Bay Saint Louis, MS.		
[NASA-CASE-GSC-12630-1]	c 33	N83-36355	[NASA-CASE-GSC-12897-1]	c 74	N87-21679	A combined air and water pollution control system		
High speed multi focal plane optical system			Programmable electronic synthesized capacitance			[NASA-CASE-NST-00007-1]	c 45	N89-28967
[NASA-CASE-GSC-12683-1]	c 74	N83-36898	[NASA-CASE-GSC-12961-1]	c 33	N87-22895	National Aeronautics and Space Administration. John F. Kennedy Space Center, Cocoa Beach, FL.		
Real-time 3-D X-ray and gamma-ray viewer			Reciprocating linear motor			Device for determining the accuracy of the flare on a flared tube		
[NASA-CASE-GSC-12640-1]	c 74	N84-11920	[NASA-CASE-GSC-12773-2]	c 33	N87-23904	[NASA-CASE-XKS-03495]	c 14	N69-39785
Holding fixture for a hot stamping press			Integrated photo-responsive metal oxide semiconductor circuit			Quick attach and release fluid coupling assembly		
[NASA-CASE-GSC-12619-1]	c 37	N84-12491	[NASA-CASE-GSC-12782-1]	c 33	N88-14271	Patent		
Unidirectional flexural pivot			Three axis attitude control system			[NASA-CASE-XKS-01985]	c 15	N71-10782
[NASA-CASE-GSC-12622-1]	c 37	N84-12492	[NASA-CASE-GSC-12970-1]	c 08	N88-23808	Parasitic probe antenna Patent		
Tuned analog network			Cellular thermosetting fluoropolymers and process for making them			[NASA-CASE-XKS-09348]	c 09	N71-13521
[NASA-CASE-GSC-12650-1]	c 33	N84-14421	[NASA-CASE-GSC-13008-1]	c 27	N88-23894	Electronic checkout system for space vehicles Patent		
Thermal control system			Polymeric heat pipe wick			[NASA-CASE-XKS-08012-2]	c 31	N71-15566
[NASA-CASE-GSC-12771-1]	c 34	N84-14461	[NASA-CASE-GSC-13019-1]	c 34	N88-29133	Apparatus for tensile testing Patent		
Laser Resonator			Legislated emergency locating transmitters and emergency position indicating radio beacons			[NASA-CASE-XKS-06250]	c 14	N71-15600
[NASA-CASE-GSC-12565-1]	c 36	N84-14509	[NASA-CASE-GSC-12892-1]	c 32	N89-14374	Weatherproof helix antenna Patent		
High stability buffered phase comparator			Surface tension confined liquid cryogen cooler			[NASA-CASE-XKS-08485]	c 07	N71-19493
[NASA-CASE-GSC-12645-1]	c 33	N84-16454	[NASA-CASE-GSC-13112-1]	c 31	N89-29578	Valve seat with resilient support member Patent		
Navigation system and method			Cellular thermosetting fluorodiepoxy polymers			[NASA-CASE-XKS-02582]	c 15	N71-21234
[NASA-CASE-GSC-12508-1]	c 04	N84-22546	[NASA-CASE-GSC-13008-2]	c 27	N90-16949	Diode and protection fuse unit Patent		
Low noise tuned amplifier			Microwave field effect transistor			[NASA-CASE-XKS-03381]	c 09	N71-22796
[NASA-CASE-GSC-12567-1]	c 33	N84-22887	[NASA-CASE-GSC-12442-2]	c 33	N90-20282	Optical monitor panel Patent		
Dual aperture multispectral Schmidt objective			Ceramic heat pipe wick			[NASA-CASE-XKS-03509]	c 14	N71-23175
[NASA-CASE-GSC-12756-1]	c 74	N84-23248	[NASA-CASE-GSC-13199-1]	c 27	N90-23541	Separation simulator Patent		
Off-axis coherently pumped laser			Reflection oscillators employing series resonant crystals			[NASA-CASE-XKS-04631]	c 10	N71-23663
[NASA-CASE-GSC-12592-1]	c 36	N84-28065	[NASA-CASE-GSC-13173-1]	c 33	N90-23635	Controlled release device Patent		
Apparatus for and method of compensating dynamic unbalance			National Aeronautics and Space Administration. Hugh L. Dryden Flight Research Center, Edwards, CA.			[NASA-CASE-XKS-03338]	c 15	N71-24043
[NASA-CASE-GSC-12550-1]	c 37	N84-28082	Fifth wheel			Phonocardiogram simulator Patent		
Workpiece positioning vise			[NASA-CASE-FRC-10081-1]	c 37	N77-14477	[NASA-CASE-XKS-10804]	c 05	N71-24606
[NASA-CASE-GSC-12762-1]	c 37	N84-28083	Window comparator			VHF/UHF parasitic probe antenna Patent		
Memory-based parallel data output controller			[NASA-CASE-FRC-10090-1]	c 33	N78-18308	[NASA-CASE-XKS-09340]	c 07	N71-24614
[NASA-CASE-GSC-12447-2]	c 60	N84-28491	Wire stripper			BCD to decimal decoder Patent		
Imaging X-ray spectrometer			[NASA-CASE-FRC-10111-1]	c 37	N79-10419	[NASA-CASE-XKS-06167]	c 08	N71-24890
[NASA-CASE-GSC-12682-1]	c 35	N84-33765	Free wing assembly for an aircraft			Flammability test chamber Patent		
Apparatus for disintegrating kidney stones			[NASA-CASE-FRC-10092-1]	c 05	N79-12061	[NASA-CASE-KSC-10126]	c 11	N71-24985
[NASA-CASE-GSC-12652-1]	c 52	N84-34913	Voltage regulator for battery power source			Video sync processor Patent		
Portable pallet weighing apparatus			[NASA-CASE-FRC-10116-1]	c 33	N79-23345	[NASA-CASE-KSC-10002]	c 10	N71-25865
[NASA-CASE-GSC-12789-1]	c 35	N85-20294	Air speed and attitude probe			Weld preparation machine Patent		
Linear magnetic bearings			[NASA-CASE-FRC-11009-1]	c 06	N80-18036	[NASA-CASE-XKS-07953]	c 15	N71-26134
[NASA-CASE-GSC-12582-2]	c 37	N85-20337	Attaching of strain gages to substrates			Validation device for spacecraft checkout equipment		
Method and apparatus for mapping the distribution of chemical elements in an extended medium			[NASA-CASE-FRC-10093-1]	c 35	N80-20560	Patent		
[NASA-CASE-GSC-12608-1]	c 25	N85-21279	Pulse transducer with artifact signal attenuator			[NASA-CASE-XKS-10543]	c 07	N71-26292
Magnetically actuated compressor			[NASA-CASE-FRC-11012-1]	c 52	N80-23969	Internal work light Patent		
[NASA-CASE-GSC-12799-1]	c 31	N85-21404	Portable device for use in starting air-start-units for aircraft and having cable lead testing capability			[NASA-CASE-XKS-05932]	c 09	N71-26787
Method of and apparatus for measuring temperature and pressure			[NASA-CASE-FRC-10113-1]	c 33	N80-26599	Emergency escape system Patent		
[NASA-CASE-GSC-12558-1]	c 36	N85-21639	System for use in conducting wake investigation for a wing in flight			[NASA-CASE-XKS-07814]	c 15	N71-27067
Diffusely reflecting paints including polytetrafluoroethylene and method of manufacture			[NASA-CASE-FRC-11024-1]	c 02	N80-28300	Voltage dropout sensor Patent		
[NASA-CASE-GSC-12883-1]	c 27	N85-29044	Active notch filter network with variable notch depth, width and frequency			[NASA-CASE-KSC-10020]	c 10	N71-27338
Reactanceless synthesized impedance bandpass amplifier			[NASA-CASE-FRC-11055-1]	c 33	N80-29583	Autoignition test cell Patent		
[NASA-CASE-GSC-12788-1]	c 33	N85-29145	Skin friction measuring device for aircraft			[NASA-CASE-KSC-10198]	c 11	N71-28629
High voltage isolation transformer			[NASA-CASE-FRC-11029-1]	c 06	N81-17057	Protective suit having an audio transceiver Patent		
[NASA-CASE-GSC-12817-1]	c 33	N85-29146	Method for observing the features characterizing the surface of a land mass			[NASA-CASE-KSC-10164]	c 07	N71-33108
High voltage power supply			[NASA-CASE-FRC-11013-1]	c 43	N81-17499	Ripple indicator		
[NASA-CASE-GSC-12818-1]	c 33	N85-29147	Thermocouple, multiple junction reference oven			[NASA-CASE-KSC-10162]	c 09	N72-11225
Three-dimensional and tomographic imaging device for X-ray and gamma-ray emitting objects			[NASA-CASE-FRC-10112-1]	c 35	N81-26431	High speed photo-optical time recording		
[NASA-CASE-GSC-12851-1]	c 35	N85-30281	Electrical servo actuator bracket			[NASA-CASE-KSC-10294]	c 14	N72-18411
JFET reflection oscillator			[NASA-CASE-FRC-11044-1]	c 37	N81-33483	High speed direct binary-to-binary coded decimal converter		
[NASA-CASE-GSC-12555-1]	c 33	N86-19515	System for providing an integrated display of instantaneous information relative to aircraft attitude, heading, altitude, and horizontal situation			[NASA-CASE-KSC-10326]	c 08	N72-21197
Temperature averaging thermal probe			[NASA-CASE-FRC-11005-1]	c 06	N82-16075	Automatic frequency control loop including synchronous switching circuits		
[NASA-CASE-GSC-12795-1]	c 35	N86-19580	Multiple pure tone elimination strut assembly			[NASA-CASE-KSC-10393]	c 09	N72-21247
Cutting head for ultrasonic lithotripsy			[NASA-CASE-FRC-11062-1]	c 71	N82-16800	Zero gravity shadow shield aligner		
[NASA-CASE-GSC-12844-1]	c 52	N86-19885				[NASA-CASE-KSC-10622-1]	c 31	N72-21893
GaAs Schottky barrier photo-responsive device and method of fabrication						Universal environment package with sectional component housing		
[NASA-CASE-GSC-12816-1]	c 76	N86-20150				[NASA-CASE-KSC-10031]	c 15	N72-22486

Buffered analog converter  
[NASA-CASE-KSC-10397] c 08 N72-25206

Lamp modulator  
[NASA-CASE-KSC-10565] c 09 N72-25250

Cable stabilizer for open shaft cable operated elevators  
[NASA-CASE-KSC-10513] c 15 N72-25453

Pressurized lighting system  
[NASA-CASE-KSC-10644] c 09 N72-27227

High speed direct binary to binary coded decimal converter and scaler  
[NASA-CASE-KSC-10595] c 08 N73-12176

Geysering inhibitor for vertical cryogenic transfer pipe  
[NASA-CASE-KSC-10615] c 15 N73-12488

Electronic video editor  
[NASA-CASE-KSC-10003] c 10 N73-13235

Collapsible high gain antenna  
[NASA-CASE-KSC-10392] c 07 N73-26117

Floating baffle to improve efficiency of liquid transfer from tanks  
[NASA-CASE-KSC-10639] c 15 N73-26472

Zero gravity liquid transfer screen  
[NASA-CASE-KSC-10626] c 14 N73-27378

Television multiplexing system  
[NASA-CASE-KSC-10654-1] c 07 N73-30115

Lightning tracking system  
[NASA-CASE-KSC-10729-1] c 09 N73-32110

Rocket borne instrument to measure electric fields inside electrified clouds  
[NASA-CASE-KSC-10730-1] c 14 N73-32318

Electric field measuring and display system  
[NASA-CASE-KSC-10731-1] c 33 N74-27862

Digital servo controller  
[NASA-CASE-KSC-10769-1] c 33 N74-29556

Signal conditioner test set  
[NASA-CASE-KSC-10750-1] c 35 N75-12270

Variable resistance constant tension and lubrication device  
[NASA-CASE-KSC-10723-1] c 37 N75-13265

Voltage monitoring system  
[NASA-CASE-KSC-10736-1] c 33 N75-19521

Lightning current measuring systems  
[NASA-CASE-KSC-10807-1] c 33 N75-26246

Dual digital video switcher  
[NASA-CASE-KSC-10782-1] c 33 N75-30431

Compact bi-phase pulse coded modulation decoder  
[NASA-CASE-KSC-10834-1] c 33 N76-14371

Percutaneous connector device  
[NASA-CASE-KSC-10849-1] c 52 N77-14738

Magnetic electrical connectors for biomedical percutaneous implants  
[NASA-CASE-KSC-11030-1] c 52 N77-25772

Rotational joint assembly for the prosthetic leg  
[NASA-CASE-KSC-11004-1] c 54 N77-30749

Fiber optic multiplex optical transmission system  
[NASA-CASE-KSC-11047-1] c 74 N78-14889

Microcomputerized electric field meter diagnostic and calibration system  
[NASA-CASE-KSC-11035-1] c 35 N78-28411

Ocean thermal plant  
[NASA-CASE-KSC-11034-1] c 44 N78-32542

Lightning current waveform measuring system  
[NASA-CASE-KSC-11018-1] c 33 N79-10337

Remote lightning monitor system  
[NASA-CASE-KSC-11031-1] c 33 N79-11315

Illumination control apparatus for compensating solar light  
[NASA-CASE-KSC-11010-1] c 74 N79-12890

Lightning current detector  
[NASA-CASE-KSC-11057-1] c 33 N79-14305

Apparatus including a plurality of spaced transformers for locating short circuits in cables  
[NASA-CASE-KSC-10899-1] c 33 N79-18193

Digital automatic gain amplifier  
[NASA-CASE-KSC-11008-1] c 33 N79-22373

Telephone multiline signaling using common signal pair  
[NASA-CASE-KSC-11023-1] c 32 N79-23310

Prosthesis coupling  
[NASA-CASE-KSC-11069-1] c 52 N79-26772

Fire extinguishing apparatus having a slidable mass for a penetrator nozzle  
[NASA-CASE-KSC-11064-1] c 31 N81-14137

System for sterilizing objects  
[NASA-CASE-KSC-11085-1] c 54 N81-24724

Common data buffer system  
[NASA-CASE-KSC-11048-1] c 62 N81-24779

System and method for refurbishing and processing parachutes  
[NASA-CASE-KSC-11042-2] c 02 N81-26073

Decommutator patchboard verifier  
[NASA-CASE-KSC-11065-1] c 33 N81-26359

Automatic flowmeter calibration system  
[NASA-CASE-KSC-11076-1] c 34 N81-26402

Lightning discharge identification system  
[NASA-CASE-KSC-11099-1] c 47 N82-24779

Method for refurbishing and processing parachutes  
[NASA-CASE-KSC-11042-1] c 09 N82-29330

Method for repair of thin glass coatings  
[NASA-CASE-KSC-11097-1] c 27 N82-33520

Serial data correlator/code translator  
[NASA-CASE-KSC-11025-1] c 32 N83-13323

Fiber optic crossbar switch for automatically patching optical signals  
[NASA-CASE-KSC-11104-1] c 74 N83-29032

Automatic level control circuit  
[NASA-CASE-KSC-11170-1] c 33 N83-36356

Inflight IFR procedures simulator  
[NASA-CASE-KSC-11218-1] c 09 N85-19990

Video processor for air traffic control beacon system  
[NASA-CASE-KSC-11155-1] c 04 N86-19304

Liquid hydrogen polygeneration system and process  
[NASA-CASE-KSC-11304-2] c 28 N86-23744

Method and apparatus for operating on companded PCM voice data  
[NASA-CASE-KSC-11285-1] c 32 N86-27513

Personnel emergency carrier vehicle  
[NASA-CASE-KSC-11282-1] c 85 N87-21755

Quick-disconnect inflatable seal assembly  
[NASA-CASE-KSC-11368-1] c 37 N89-13786

Multi-adjustable headband  
[NASA-CASE-KSC-11322-1] c 54 N89-29953

Vortex motion phase separator for zero gravity liquid transfer  
[NASA-CASE-KSC-11387-1] c 29 N90-20236

Induction-type metal detector with increased scanning area capability  
[NASA-CASE-KSC-11386-1] c 35 N90-22023

Optical shutter switching matrix  
[NASA-CASE-KSC-11392-1] c 74 N90-22383

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Lyndon B. Johnson Space Center, Houston, TX.**

Coupling device  
[NASA-CASE-XMS-07846-1] c 09 N69-21927

Flow test device  
[NASA-CASE-XMS-04917] c 14 N69-24257

Visual target for retrofire attitude control  
[NASA-CASE-XMS-12158-1] c 31 N69-27499

System for monitoring signal amplitude ranges  
[NASA-CASE-XMS-04061-1] c 09 N69-39885

Amplifier drift tester  
[NASA-CASE-XMS-05562-1] c 09 N69-39986

System for improving signal-to-noise ratio of a communication signal Patent Application  
[NASA-CASE-MSC-12259-1] c 07 N70-12616

Two-step rocket engine bipropellant valve Patent  
[NASA-CASE-XMS-04890-1] c 15 N70-22192

Heat shield Patent  
[NASA-CASE-XMS-00486] c 33 N70-33344

Life raft Patent  
[NASA-CASE-XMS-00863] c 05 N70-34857

Shock absorbing support and restraint means Patent  
[NASA-CASE-XMS-01240] c 05 N70-35152

Energy absorbing structure Patent Application  
[NASA-CASE-MSC-12279-1] c 15 N70-35679

Bonded solid lubricant coating Patent  
[NASA-CASE-XMS-00259] c 18 N70-36400

Life preserver Patent  
[NASA-CASE-XMS-00864] c 05 N70-36493

Resuscitation apparatus Patent  
[NASA-CASE-XMS-01115] c 05 N70-39922

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- Anti-buckling fatigue test assembly  
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- Orbital and entry tracking accessory for globes  
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- Totally confined explosive welding  
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- Electrostatic measurement system  
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- Vacuum leak detector  
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- Method and apparatus for fluffing, separating, and cleaning fibers  
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- Therapeutic hand exerciser  
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- Magnetic heading reference  
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- Airfoil shape for flight at subsonic speeds  
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- Particulate and aerosol detector  
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- High temperature strain gage calibration fixture  
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- Vacuum pressure molding technique  
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- Instrumentation for measuring aircraft noise and sonic boom  
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- Method for detecting pollutants  
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- Casting propellant in rocket engine  
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- Anti-multipath digital signal detector  
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- Weld-bonded titanium structures  
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- Phase modulating with odd and even finite power series of a modulating signal  
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- Miniature biaxial strain transducer  
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- Solid propellant rocket motor and method of making same  
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- Binocular device for displaying numerical information in field of view  
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- Electro-mechanical sine/cosine generator  
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- Molded composite pyrogen igniter for rocket motors  
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Manned Spacecraft Center, Cape Canaveral, FL

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- Regenerative Cu La zeolite supported desulfurizing sorbents  
[NASA-CASE-NPO-17480-1-CU] c 25 N90-26088
- Multicomponent gas sorption Joule-Thomson refrigerator  
[NASA-CASE-NPO-17569-1-CU] c 31 N90-26176
- Fluid-loop reaction system  
[NASA-CASE-NPO-17204-1-CU] c 34 N90-26292
- Direct drive robotic hand  
[NASA-CASE-NPO-17817-1-CU] c 37 N90-26339
- Improving the geometric fidelity of imaging systems employing sensor arrays  
[NASA-CASE-NPO-17970-1-CU] c 43 N90-26384
- Self-checking on-line testable static RAM  
[NASA-CASE-NPO-17839-1-CU] c 60 N90-26518
- High speed magneto-resistive random access memory  
[NASA-CASE-NPO-17954-1-CU] c 60 N90-26519
- Passivation of high temperature superconductors  
[NASA-CASE-NPO-17949-1-CU] c 78 N90-26684
- MBE growth technology for high quality strained III-V layers  
[NASA-CASE-NPO-17723-1-CU] c 76 N90-26685
- New core design for use with precision composite reflectors  
[NASA-CASE-NPO-17858-1-CU] c 24 N90-26880
- Silicon containing electroconductive polymers and structures made therefrom  
[NASA-CASE-NPO-17826-1-CU] c 27 N90-26952
- Planar microstrip Yagi array antenna  
[NASA-CASE-NPO-17873-1-CU] c 32 N90-27015
- Multistage estimation of received carrier signal parameters under very high dynamic conditions of the receiver  
[NASA-CASE-NPO-17911-1-CU] c 32 N90-27016
- VLSI architecture for a Reed-Solomon decoder  
[NASA-CASE-NPO-17897-1-CU] c 33 N90-27040
- Metal chloride cathode for a battery  
[NASA-CASE-NPO-17809-1-CU] c 33 N90-27041
- Improved high power/high frequency inductor  
[NASA-CASE-NPO-17830-1-CU] c 33 N90-27042
- Adjustable choke for fluids nozzle  
[NASA-CASE-NPO-17825-1-CU] c 34 N90-27070
- Method and apparatus for configuration control of redundant robots  
[NASA-CASE-NPO-17801-1-CU] c 37 N90-27110
- Pseudomonas diagnostic assay  
[NASA-CASE-NPO-17653-1-CU] c 51 N90-27239
- Special purpose parallel computer architecture for real-time control and simulation in robotic applications  
[NASA-CASE-NPO-17829-1-CU] c 60 N90-27268
- Modified fast frequency acquisition via adaptive least squares algorithm  
[NASA-CASE-NPO-17845-1-CU] c 61 N90-27341
- Analog hardware for learning neural networks  
[NASA-CASE-NPO-17664-1-CU] c 62 N90-27384
- Neural network with dynamically adaptable neurons  
[NASA-CASE-NPO-17803-1-CU] c 62 N90-27385
- All-optical photochromic spatial light modulators based on photoinduced electron transfer in rigid matrices  
[NASA-CASE-NPO-17612-1-CU] c 74 N90-27487
- Equal path, phase shifting, sample point interferometer for monitoring the configuration of surfaces  
[NASA-CASE-NPO-17913-1-CU] c 74 N90-27488
- Growth of III-V films by control of MBE growth front stoichiometry  
[NASA-CASE-NPO-17724-1-CU] c 76 N90-27517
- Method of forming three-dimensional semiconductor structures  
[NASA-CASE-NPO-17835-1-CU] c 76 N90-27518
- National Aeronautics and Space Administration.**  
**Wallops Flight Center, Wallops Island, VA.**  
Thin film strain transducer  
[NASA-CASE-WLP-10055-1] c 35 N84-28015
- Thin film strain transducer  
[NASA-CASE-WLP-10055-2] c 35 N85-21598
- National Aeronautics and Space Administration.**  
**Western Operations Office, Santa Monica, CA.**  
Automatic pump Patent  
[NASA-CASE-XNP-04731] c 15 N71-24042
- National Bureau of Standards, Boulder, CO.**  
Densitometer Patent  
[NASA-CASE-XLE-00688] c 14 N70-41330
- National Oceanic and Atmospheric Administration, Boulder, CO.**  
Determining distance to lightning strokes from a single station  
[NASA-CASE-KSC-10698] c 07 N73-20175
- National Research Corp., Cambridge, MA.**  
Gauge calibration by diffusion  
[NASA-CASE-XGS-07752] c 14 N73-30390
- Ultrahigh vacuum measuring ionization gauge  
[NASA-CASE-XLA-05087] c 14 N73-30391
- Apparatus for absolute pressure measurement  
[NASA-CASE-LAR-10000] c 14 N73-30394
- Ultrahigh vacuum gauge having two collector electrodes  
[NASA-CASE-LAR-02743] c 14 N73-32324
- Rock sampling  
[NASA-CASE-XNP-10007-1] c 46 N74-23068
- Rock sampling  
[NASA-CASE-XNP-09755] c 46 N74-23069
- National Science Foundation, Washington, DC.**  
Laser apparatus  
[NASA-CASE-GSC-12237-1] c 36 N80-14384
- Nevada Univ. System, Reno.**  
Constant-output atomizer  
[NASA-CASE-MFS-25631-1] c 34 N84-12406
- New England Medical Center Hospitals, Boston, MA.**  
Determination of antimicrobial susceptibilities on infected urines without isolation  
[NASA-CASE-GSC-12046-1] c 52 N79-14750
- North American Aviation, Inc., Canoga Park, CA.**  
Method of joining aluminum to stainless steel Patent  
[NASA-CASE-MFS-07369] c 15 N71-20443
- Propellant mass distribution metering apparatus Patent  
[NASA-CASE-NPO-10185] c 10 N71-26339
- Safety-type locking pin  
[NASA-CASE-MFS-18495] c 15 N72-11385
- Hydrogen fire detection system with logic circuit to analyze the spectrum of temporal variations of the optical spectrum  
[NASA-CASE-MFS-13130] c 10 N72-17173
- North American Aviation, Inc., Downey, CA.**  
Heat shield oven  
[NASA-CASE-XMS-04318] c 15 N69-27871
- Extensible cable support Patent  
[NASA-CASE-XMF-07587] c 15 N71-18701
- High pressure air valve Patent  
[NASA-CASE-MSC-11010] c 15 N71-19485
- Load relieving device Patent  
[NASA-CASE-XMS-06329-1] c 15 N71-20441
- Optical projector system Patent  
[NASA-CASE-XNP-03853] c 23 N71-21882
- Brazing alloy Patent  
[NASA-CASE-XNP-03063] c 17 N71-23365
- Vibrophonocardiograph Patent  
[NASA-CASE-XFR-07172] c 05 N71-27234
- North American Aviation, Inc., El Segundo, CA.**  
Aerodynamic spike nozzle Patent  
[NASA-CASE-XGS-01143] c 31 N71-15647
- Expanding center probe and drogue Patent  
[NASA-CASE-XMS-03613] c 31 N71-16346
- Radio frequency shielded enclosure Patent  
[NASA-CASE-XMF-09422] c 07 N71-19436
- High impedance measuring apparatus Patent  
[NASA-CASE-XMS-08589-1] c 09 N71-20569
- Latching mechanism Patent  
[NASA-CASE-XMS-03745] c 15 N71-21076
- Tube dimpling tool Patent  
[NASA-CASE-XMS-06876] c 15 N71-21536
- Positive locking check valve Patent  
[NASA-CASE-XMS-09310] c 15 N71-22706
- Etching of aluminum for bonding Patent  
[NASA-CASE-XMF-02303] c 17 N71-23828
- Method and apparatus for varying thermal conductivity Patent  
[NASA-CASE-XNP-05524] c 33 N71-24876
- Purge device for thrust engines Patent  
[NASA-CASE-XMS-04826] c 28 N71-28849
- Method and construction for protecting heat sensitive bodies from thermal radiation and convective heat Patent  
[NASA-CASE-XNP-01310] c 33 N71-28852
- Propellant tank pressurization system Patent  
[NASA-CASE-XNP-00650] c 27 N71-28929
- Spherical shield Patent  
[NASA-CASE-XNP-01855] c 15 N71-28937
- Universal restrainer and joint Patent  
[NASA-CASE-XNP-02278] c 15 N71-28951
- Method and device for cooling Patent  
[NASA-CASE-HQN-00938] c 33 N71-29053
- North American Aviation, Inc., Los Angeles, CA.**  
Method and system for respiration analysis Patent  
[NASA-CASE-XFR-08403] c 05 N71-11202
- North American Aviation, Inc., Torrance, CA.**  
Method and apparatus for detection and location of microleaks Patent  
[NASA-CASE-XMF-02307] c 14 N71-10779
- North American Aviation, Inc., Woodland Hills, CA.**  
Fluid pressure balanced seal  
[NASA-CASE-XGS-01286-1] c 37 N79-33469
- North American Phillips Co., Inc., Briarcliff Manor, NY.**  
Linear magnetic bearings  
[NASA-CASE-GSC-12582-2] c 37 N85-20337
- North American Rockwell Corp., Canoga Park, CA.**  
Noncontaminating swabs  
[NASA-CASE-MFS-18100] c 15 N72-11390
- Observation window for a gas confining chamber  
[NASA-CASE-NPO-10890] c 11 N73-12265



- Droplet monitoring probe  
[NASA-CASE-NPO-10985] c 14 N73-20478  
Circuit board package with wedge shaped covers  
[NASA-CASE-MFS-21919-1] c 10 N73-25243  
Heat flow calorimeter  
[NASA-CASE-GSC-11434-1] c 34 N74-27859

**North American Rockwell Corp., Downey, CA.**

- Spacecraft Patent  
[NASA-CASE-MSC-13047-1] c 31 N71-25434  
Latching mechanism Patent  
[NASA-CASE-MSC-15474-1] c 15 N71-26162  
Dye penetrant for surfaces subsequently contacted by liquid oxygen Patent  
[NASA-CASE-XMF-02221] c 18 N71-27170  
Frangible link  
[NASA-CASE-MSC-11849-1] c 15 N72-22488  
Impact monitoring apparatus  
[NASA-CASE-MSC-15626-1] c 14 N72-25411  
Bonding or repairing process  
[NASA-CASE-MSC-12357] c 15 N73-12489  
Self-cycling fluid heater  
[NASA-CASE-MSC-15567-1] c 33 N73-16918  
Phase protection system for ac power lines  
[NASA-CASE-MSC-17832-1] c 33 N74-14956  
Apparatus for remote handling of materials  
[NASA-CASE-LAR-10634-1] c 37 N74-18123  
Grain refinement control in TIG arc welding  
[NASA-CASE-MSC-18095-1] c 37 N75-19883

**North American Rockwell Corp., El Segundo, CA.**

- Apparatus for testing wiring harness by vibration generating means  
[NASA-CASE-MSC-15158-1] c 14 N72-17325

**North American Rockwell Corp., Los Angeles, CA.**

- Tactile sensing means for prosthetic limbs  
[NASA-CASE-MFS-16570-1] c 05 N73-32013

**North Carolina State Univ., Raleigh.**

- Thermal shock resistant hafnia ceramic material  
[NASA-CASE-LAR-10894-1] c 18 N73-14584  
Thermal shock and erosion resistant tantalum carbide ceramic material  
[NASA-CASE-LAR-11902-1] c 27 N78-17206

**Northeastern Univ., Boston, MA.**

- Pulse-width modulation multiplier Patent  
[NASA-CASE-XER-09213] c 07 N71-12390

**Northrop Corp., Hawthorne, CA.**

- Shock tube bypass piston tunnel  
[NASA-CASE-NPO-12109] c 11 N72-22245  
Folding structure fabricated of rigid panels  
[NASA-CASE-XHQ-02146] c 18 N75-27040

**Northrop Northronics, Palos Verdes Peninsula, CA.**

- Method of making dry electrodes  
[NASA-CASE-FRC-10029-2] c 05 N72-25121  
Valve seat  
[NASA-CASE-NPO-10606] c 15 N72-25451

**Northrop Space Labs., Hawthorne, CA.**

- Method of evaluating moisture barrier properties of encapsulating materials Patent  
[NASA-CASE-NPO-10051] c 18 N71-24934

**Northronics, Palos Verdes Peninsula, CA.**

- Flexible conductive disc electrode Patent  
[NASA-CASE-FRC-10029] c 09 N71-24618  
Gas low pressure low flow rate metering system Patent  
[NASA-CASE-FRC-10022] c 12 N71-26546  
Method of removing insulated material from insulated wires  
[NASA-CASE-FRC-10038] c 15 N72-20444

**Notre Dame Univ., IN.**

- Synthesis of polymeric schiff bases by schiff-base exchange reactions Patent  
[NASA-CASE-XMF-08651] c 06 N71-11236  
Direct synthesis of polymeric schiff bases from two amines and two aldehydes Patent  
[NASA-CASE-XMF-08655] c 06 N71-11239  
Azine polymers and process for preparing the same Patent  
[NASA-CASE-XMF-08656] c 06 N71-11242  
Synthesis of polymeric schiff bases by reaction of acetals and amine compounds Patent  
[NASA-CASE-XMF-08652] c 06 N71-11243  
Aromatic diamine-aromatic dialdehyde high molecular weight Schiff base polymers prepared in a monofunctional Schiff base Patent  
[NASA-CASE-XMF-03074] c 06 N71-24740

**O****Oakland Univ., Rochester, MI.**

- Optical process for producing classification maps from multispectral data  
[NASA-CASE-MSC-14472-1] c 43 N77-10584  
Interactive color display for multispectral imagery using correlation clustering  
[NASA-CASE-MSC-16253-1] c 32 N79-20297

**Occidental Research Corp., La Verne, CA.**

- Process for preparing higher oxides of the alkali and alkaline earth metals  
[NASA-CASE-ARC-10992-1] c 26 N78-32229

**Ohio State Univ., Columbus.**

- Horn antenna having V-shaped corrugated slots  
[NASA-CASE-LAR-11112-1] c 32 N76-15330  
Distributed-switch Dicke radiometers  
[NASA-CASE-GSC-12219-1] c 35 N80-18359

**Old Dominion Univ., Norfolk, VA.**

- Instrumentation for measuring aircraft noise and sonic boom  
[NASA-CASE-LAR-11476-1] c 07 N76-27232  
Differential sound level meter  
[NASA-CASE-LAR-12106-1] c 71 N78-14867  
High-temperature microphone system  
[NASA-CASE-LAR-12375-1] c 32 N79-24203  
Aerodynamic side-force alleviator means  
[NASA-CASE-LAR-12326-1] c 02 N81-14968  
Leading edge flap system for aircraft control augmentation  
[NASA-CASE-LAR-12787-2] c 08 N85-19985

**Oregon Univ., Portland.**

- Method for separating biological cells  
[NASA-CASE-MFS-23883-1] c 51 N80-16715

**Organon Diagnostics, El Monte, CA.**

- Water system virus detection  
[NASA-CASE-MSC-16098-1] c 51 N79-10693

**P****Packard-Bell Electronics Corp., Newbury Park, CA.**

- Optical alignment system Patent  
[NASA-CASE-XNP-02029] c 14 N70-41955

**Panaua Corp., Pennsauken, NJ.**

- Method of forming transparent films of ZnO  
[NASA-CASE-FRC-10019] c 15 N73-12487

**PCR, Inc., Gainesville, FL.**

- Perfluoroalkyl polytriazines containing pendant iodo difluoromethyl groups  
[NASA-CASE-ARC-11241-1] c 25 N81-14016

**Peninsular ChemResearch, Inc., Gainesville, FL.**

- Hydroxy terminated perfluoro ethers Patent  
[NASA-CASE-NPO-10768] c 06 N71-27254  
Perfluoro polyether acyl fluorides  
[NASA-CASE-NPO-10765] c 06 N72-20121  
Polyurethane resins from hydroxy terminated perfluoro ethers  
[NASA-CASE-NPO-10768-2] c 06 N72-27144  
Highly fluorinated polyurethanes  
[NASA-CASE-NPO-10767-2] c 06 N72-27151  
Highly fluorinated polyurethanes  
[NASA-CASE-NPO-10767-1] c 06 N73-33076

**Pennsylvania State Univ., University Park.**

- Process for the preparation of polycarbonylphosphazenes  
[NASA-CASE-ARC-11178-2] c 27 N81-27271  
Carboranylchlorophosphazenes and their polymers  
[NASA-CASE-ARC-11176-1] c 27 N82-18389  
Carboranyl(methylene-substituted phosphazenes and polymers thereof  
[NASA-CASE-ARC-11370-1] c 27 N84-22750

**Philco-Ford Corp., Houston, TX.**

- Frequency modulation demodulator threshold extension device Patent  
[NASA-CASE-MSC-12165-1] c 07 N71-33696

**Philco-Ford Corp., Newport Beach, CA.**

- Mechanically extendible telescoping boom  
[NASA-CASE-NPO-11118] c 03 N72-25021

**Philco-Ford Corp., Palo Alto, CA.**

- Composite antenna feed  
[NASA-CASE-GSC-11046-1] c 07 N73-28013  
Amplitude steered array  
[NASA-CASE-GSC-11446-1] c 33 N74-20860

**Phoenix Corp., McLean, VA.**

- External bulb variable volume maser  
[NASA-CASE-GSC-12334-1] c 36 N79-14362  
Off-axis coherently pumped laser  
[NASA-CASE-GSC-12592-1] c 36 N84-28065

**Pittsburgh Univ., PA.**

- Method and device for the detection of phenol and related compounds  
[NASA-CASE-LEW-12513-1] c 25 N79-22235

**Planning Research Corp., McLean, VA.**

- Telephone multiline signaling using common signal pair  
[NASA-CASE-KSC-11023-1] c 32 N79-23310

**Pratt and Whitney Aircraft, East Hartford, CT.**

- Liquid-gas separation system Patent  
[NASA-CASE-XMS-01624] c 15 N70-40062  
Vibration damping system Patent  
[NASA-CASE-XMS-01620] c 23 N71-15673  
Vapor pressure measuring system and method Patent  
[NASA-CASE-XMS-01618] c 14 N71-20741

- Sealing member and combination thereof and method of producing said sealing member Patent  
[NASA-CASE-XMS-01625] c 15 N71-23022

**Q****Quantum Dynamics Co., Inc., Tarzana, CA.**

- Respiratory analysis system and method  
[NASA-CASE-MSC-13436-1] c 05 N73-32015

**R****Radiation, Inc., Melbourne, FL.**

- Remote platform power conserving system  
[NASA-CASE-GSC-11182-1] c 15 N75-13007

**Radiation Instrument Development Lab., Inc., Melrose Park, IL.**

- High speed binary to decimal conversion system Patent  
[NASA-CASE-XGS-01230] c 08 N71-19544

**Radiation Systems, Inc., McLean, VA.**

- Monopulse tracking system Patent  
[NASA-CASE-XGS-01155] c 10 N71-21483

**Radio Corp. of America, Lancaster, PA.**

- Bonding graphite with fused silver chloride  
[NASA-CASE-XGS-00963] c 15 N69-39735

**Radio Corp. of America, New York.**

- Water cooled contactor for anode in carbon arc mechanism  
[NASA-CASE-XMS-03700] c 15 N69-24266  
Apparatus for ballasting high frequency transistors  
[NASA-CASE-XGS-05003] c 09 N69-24318

- Helical coaxial resonator RF filter  
[NASA-CASE-XGS-02816] c 07 N69-24323

- Radiation resistant silicon semiconductor devices Patent  
[NASA-CASE-XGS-07801] c 08 N71-12513

- GaAs solar detector using manganese as a doping agent Patent  
[NASA-CASE-XNP-01328] c 26 N71-18064

- Thermocouple assembly Patent  
[NASA-CASE-XNP-01659] c 14 N71-23039

- Method of erasing target material of a vidicon tube or the like Patent  
[NASA-CASE-XNP-06028] c 09 N71-23189

- Transient augmentation circuit for pulse amplifiers Patent  
[NASA-CASE-XNP-01068] c 10 N71-28739

**Radio Corp. of America, Princeton, NJ.**

- Connector strips-positive, negative and T tabs  
[NASA-CASE-XGS-01395] c 03 N69-21539

- Solar cell including second surface mirrors Patent  
[NASA-CASE-NPO-10109] c 03 N71-11049

- Collapsible reflector Patent  
[NASA-CASE-XMS-03454] c 09 N71-20658

- Simple method of making photovoltaic junctions Patent  
[NASA-CASE-XNP-01960] c 09 N71-23027

- Method of electrolytically binding a layer of semiconductors together Patent  
[NASA-CASE-XNP-01959] c 26 N71-23043

- Method and apparatus for distillation of liquids Patent  
[NASA-CASE-XNP-08124] c 15 N71-27184

- Maximum power point tracker Patent  
[NASA-CASE-GSC-10376-1] c 14 N71-27407

- Method of changing the conductivity of vapor deposited gallium arsenide by the introduction of water into the vapor deposition atmosphere Patent  
[NASA-CASE-XNP-01961] c 26 N71-29156

- Radial heat flux transformer  
[NASA-CASE-NPO-10828] c 33 N72-17948

- Target acquisition antenna  
[NASA-CASE-GSC-10064-1] c 10 N72-22235

- Method for distillation of liquids  
[NASA-CASE-XNP-08124-2] c 06 N73-13129

- Hermetically sealed semiconductor  
[NASA-CASE-GSC-10791-1] c 15 N73-14469

- Thermal flux transfer system  
[NASA-CASE-NPO-12070-1] c 28 N73-32606

- Rotary solenoid shutter drive assembly and rotary inertia damper and stop plate assembly  
[NASA-CASE-GSC-11560-1] c 33 N74-20861

- Frequency measurement by coincidence detection with standard frequency  
[NASA-CASE-MSC-14649-1] c 33 N76-16331

- Means for growing ribbon crystals without subjecting the crystals to thermal shock-induced strains  
[NASA-CASE-NPO-14298-1] c 76 N80-32244

- Apparatus for use in the production of ribbon-shaped crystals from a silicon melt  
[NASA-CASE-NPO-14297-1] c 33 N81-19389

- Television camera video level control system  
[NASA-CASE-MSC-18578-1] c 32 N85-21427

**RAND Corp., Santa Monica, CA.**  
Satellite communication system Patent  
[NASA-CASE-XNP-02389] c 07 N71-28900

**Raymond Engineering Lab., Inc., Middletown, CT.**  
Synchronous servo loop control system Patent  
[NASA-CASE-XNP-03744] c 10 N71-20448

**Raytheon Co., Sudbury, MA.**  
Laser Doppler system for measuring three dimensional vector velocity Patent  
[NASA-CASE-MFS-20386] c 21 N71-19212

Clear air turbulence detector  
[NASA-CASE-MFS-21244-1] c 36 N75-15028

**RCA Labs., Princeton, NJ.**  
Solar cell with improved N-region contact and method of forming the same  
[NASA-CASE-NPO-14205-1] c 44 N79-31752

**RCA Service Co., Inc., Camden, NJ.**  
Apparatus for inspecting microfilm Patent  
[NASA-CASE-MFS-20240] c 14 N71-28788

**Rensselaer Polytechnic Inst., Troy, NY.**  
Coincidence apparatus for detecting particles  
[NASA-CASE-XLA-07813] c 14 N72-17328

Dual acting slit control mechanism  
[NASA-CASE-LAR-11370-1] c 35 N80-28686

**Research Triangle Inst., Durham, NC.**  
Semiconductor p-n junction stress and strain sensor  
[NASA-CASE-XLA-04980] c 09 N69-27422

**Rochester General Hospital, NY.**  
Prosthetic occlusive device for an internal passageway  
[NASA-CASE-MFS-25740-1] c 52 N84-11744

**Rochester Univ., NY.**  
Concave grating spectrometer Patent  
[NASA-CASE-XGS-01036] c 14 N70-40003

**Rockwell International Corp., Canoga Park, CA.**  
Frequency to analog converter Patent  
[NASA-CASE-XNP-07040] c 08 N71-12500

Load cell protection device Patent  
[NASA-CASE-XMS-06782] c 32 N71-15974

Thermobulb mount Patent  
[NASA-CASE-NPO-10158] c 33 N71-16356

Laminar flow enhancement Patent  
[NASA-CASE-NPO-10122] c 12 N71-17631

Temperature sensitive flow regulator Patent  
[NASA-CASE-MFS-14259] c 15 N71-19213

Hydrogen leak detection device Patent  
[NASA-CASE-MFS-11537] c 14 N71-20442

Technique of elbow bending small jacketed transfer lines Patent  
[NASA-CASE-XNP-10475] c 15 N71-24679

Gas liquefaction and dispensing apparatus Patent  
[NASA-CASE-NPO-10070] c 15 N71-27372

Locking device for turbine rotor blades Patent  
[NASA-CASE-XNP-00816] c 28 N71-28928

Laser camera and diffusion filter therefore Patent  
[NASA-CASE-NPO-10417] c 16 N71-33410

Hydrazinium nitroformate propellant stabilized with nitroguanidine  
[NASA-CASE-NPO-12000] c 27 N72-25699

Hydrazinium nitroformate propellant with saturated polymeric hydrocarbon binder  
[NASA-CASE-NPO-12015] c 27 N73-16764

Novel polymers and method of preparing same  
[NASA-CASE-NPO-10998-1] c 06 N73-32029

Internally supported flexible duct joint  
[NASA-CASE-MFS-19193-1] c 37 N75-19686

Brazing alloy binder  
[NASA-CASE-XMF-05868] c 26 N75-27125

Brazing alloy composition  
[NASA-CASE-XMF-06053] c 26 N75-27126

Brazing alloy  
[NASA-CASE-XNP-03878] c 26 N75-27127

Method and apparatus for vibration analysis utilizing the Mossbauer effect  
[NASA-CASE-XMF-05882] c 35 N75-27329

Method of heat treating age-hardenable alloys  
[NASA-CASE-XNP-01311] c 26 N75-29236

Thrust measurement  
[NASA-CASE-XMS-05731] c 35 N75-28382

Externally supported internally stabilized flexible duct joint  
[NASA-CASE-MFS-19194-1] c 37 N76-14460

Device for installing rocket engines  
[NASA-CASE-MFS-19220-1] c 20 N76-22296

Accumulator  
[NASA-CASE-MFS-19287-1] c 34 N77-30399

Laser extensometer  
[NASA-CASE-MFS-19259-1] c 36 N78-14380

Stable superconducting magnet  
[NASA-CASE-XMF-05373-1] c 33 N79-21264

**Rockwell International Corp., Downey, CA.**  
Apparatus for positioning modular components on a vertical or overhead surface  
[NASA-CASE-LAR-11465-1] c 37 N76-21554

Flanged major modular assembly jig  
[NASA-CASE-MSC-19372-1] c 39 N76-31562

Aircraft-mounted crash-activated transmitter device  
[NASA-CASE-MFS-16609-3] c 03 N76-32140

Window defect planar mapping technique  
[NASA-CASE-MSC-19442-1] c 74 N77-10899

Mechanical sequencer  
[NASA-CASE-MSC-19538-1] c 37 N77-22482

Load regulating latch  
[NASA-CASE-MSC-19535-1] c 37 N77-32499

Adjustable securing base  
[NASA-CASE-MSC-19666-1] c 37 N78-17383

Method of producing complex aluminum alloy parts of high temper. and products thereof  
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[NASA-CASE-MSC-18934-3] c 24 N82-26387

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- Method of producing crystalline materials  
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- Spherical tank gauge Patent  
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- Flow diverter valve and flow diversion method  
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- High modulus invert analog glass compositions containing beryllia  
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- United Aircraft Corp., Stratford, CT.**
- Bonded joint and method  
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- United Aircraft Corp., Sunnyvale, CA.**
- Method and tool for machining a transverse slot about a bore  
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- United Aircraft Corp., West Palm Beach, FL.**
- Inherent redundancy electric heater  
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- High modulus rare earth and beryllium containing silicate glass compositions  
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- Reactant pressure differential control for fuel cell gases  
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- Cam-operated pitch-change apparatus  
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- United Technology Center, Sunnyvale, CA.**
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- University of Southern Mississippi, Hattiesburg.**
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**V****Vanderbilt Univ., Nashville, TN.**

- Solar driven liquid metal MHD power generator  
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**Vapor Corp., Chicago, IL.**

- Method and apparatus for controllably heating fluid  
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- High power-high voltage waterload Patent  
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- II-V photocathode with nitrogen doping for increased quantum efficiency  
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- Logarithmic circuit with wide dynamic range  
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- N-propargyl groups  
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- Dual differential interferometer  
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- Mechanical end joint system for structural column elements  
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**W****Weber Aircraft Corp., Burbank, CA.**

- Articulated multiple couch assembly Patent  
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- Device for separating occupant from an ejection seat Patent  
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- Collapsible Apollo couch  
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- Broadband choke for antenna structure  
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- Electronic background suppression method and apparatus for a field scanning sensor  
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- Solid-state current transformer  
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- Time delay and integration detectors using charge transfer devices  
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- Westinghouse Electric Corp., Huntsville, AL.**
- Solid state television camera system Patent  
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**Westinghouse Electric Corp., Lima, OH.**

- Transistor drive regulator Patent  
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- Linear sawtooth voltage-wave generator employing transistor timing circuit having capacitor-zener diode combination feedback Patent  
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- Millimeter wave pumped parametric amplifier  
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- Westinghouse Electric Corp., Trafford, PA.**
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- Electronically resettable fuse Patent  
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- Polyurethanes of fluorine containing polycarbonates  
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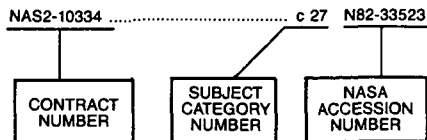
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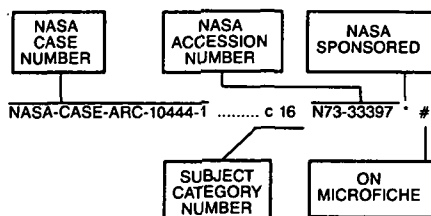
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### Section 2

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NAS 1.71:LAR-14149-1-SB . c 14 N89-28547 \*

NAS 1.71:LAR-14158-1 . c 16 N90-16781 \*

NAS 1.71:LAR-14159-1-CU . c 27 N90-26953 \*

NAS 1.71:LAR-14162-1 . c 27 N90-15259 \*

NAS 1.71:LAR-14194-1 . c 24 N90-15148 \*

NAS 1.71:LAR-14188-1 . c 27 N90-26956 \*

NAS 1.71:LAR-14203-1 . c 36 N89-28617 \*

NAS 1.71:LAR-14250-1-SB . c 72 N90-27472 \*

NAS 1.71:LAR-14338-1 . c 24 N90-26881 \*

NAS 1.71:LEW-14339-1 . c 27 N90-26955 \*

NAS 1.71:LEW-12995-1 . c 37 N84-33808 \*

NAS 1.71:LEW-13324-2 . c 24 N85-21266 \*

NAS 1.71:LEW-13414-1 . c 44 N85-20530 \*

NAS 1.71:LEW-13495-1 . c 33 N84-33663 \*

NAS 1.71:LEW-13524-1 . c 07 N84-33410 \*

NAS 1.71:LEW-13639-1 . c 26 N84-33555 \*

NAS 1.71:LEW-13770-3 . c 27 N85-21350 \*

NAS 1.71:LEW-13770-4 . c 27 N85-21351 \*

NAS 1.71:LEW-13770-5 . c 27 N85-21352 \*

NAS 1.71:LEW-13827-1 . c 44 N85-21768 \*

NAS 1.71:LEW-13833-1 . c 33 N85-21492 \*

NAS 1.71:LEW-13837-2 . c 24 N85-21267 \*

NAS 1.71:LEW-13881-1 . c 20 N85-21256 \*

NAS 1.71:LEW-14080-1 . c 31 N85-20153 \*

NAS 1.71:LEW-14127-1 . c 33 N88-20680 \*

NAS 1.71:LEW-14203-1 . c 27 N88-29984 \*

NAS 1.71:LEW-14295-1 . c 31 N89-14348 \*

NAS 1.71:LEW-14472-1 . c 24 N89-14259 \*

NAS 1.71:LEW-14672-1 . c 37 N90-15444 \*

NAS 1.71:LEW-14678-2 . c 76 N90-17454 \*

NAS 1.71:LEW-14679-1 . c 27 N89-28651 \*

NAS 1.71:LEW-14698-2 . c 24 N88-29888 \*

NAS 1.71:LEW-14698-2 . c 27 N90-15262 \*

NAS 1.71:LEW-14734-1 . c 24 N89-23623 \*

NAS 1.71:LEW-14746-1 . c 33 N90-17009 \*

NAS 1.71:LEW-14778-1 . c 37 N90-15445 \*

NAS 1.71:LEW-14795-1 . c 74 N90-15733 \*

NAS 1.71:LEW-14846-1 . c 20 N90-15130 \*

NAS 1.71:LEW-14848-1 . c 14 N89-28549 \*

NAS 1.71:LEW-14880-1 . c 35 N90-10415 \*

NAS 1.71:LEW-14901-1 . c 75 N90-10718 \*

NAS 1.71:LEW-14990-1-CU . c 24 N90-15147 \*

NAS 1.71:MFS-25302-2 . c 33 N84-33660 \*

NAS 1.71:MFS-25637-1 . c 44 N85-21769 \*

NAS 1.71:MFS-25717-1 . c 35 N84-33768 \*

NAS 1.71:MFS-25721-1 . c 25 N85-21280 \*

NAS 1.71:MFS-25862-1 . c 33 N84-33661 \*

NAS 1.71:MFS-25862-2 . c 37 N85-22877 \*

NAS 1.71:MFS-25862-2 . c 27 N85-20126 \*

NAS 1.71:MFS-26002-1-CU . c 35 N86-26598 \*

NAS 1.71:MFS-26049-1-NP . c 25 N89-28603 \*

NAS 1.71:MFS-26083-1-CU . c 26 N90-26940 \*

NAS 1.71:MFS-28008-1 . c 35 N85-20300 \*

NAS 1.71:MFS-28013-1 . c 89 N86-22459 \*

NAS 1.71:MFS-28013-3 . c 89 N90-27594 \*

NAS 1.71:MFS-28013-4 . c 89 N90-27595 \*

NAS 1.71:MFS-28139-1 . c 29 N87-18679 \*

NAS 1.71:MFS-28153-1 . c 31 N86-32589 \*

NAS 1.71:MFS-28161-1 . c 37 N87-18817 \*

NAS 1.71:MFS-28183-1 . c 74 N89-13253 \*

NAS 1.71:MFS-28248-1 . c 31 N88-24817 \*

NAS 1.71:MFS-28273-1 . c 37 N88-23974 \*

NAS 1.71:MFS-28282-1 . c 76 N88-29602 \*

NAS 1.71:MFS-28287-1 . c 35 N88-23959 \*

NAS 1.71:MFS-28294-1 . c 31 N90-10310 \*

NAS 1.71:MFS-28314-1 . c 26 N90-15227 \*

NAS 1.71:MFS-28327-1 . c 18 N89-28556 \*

NAS 1.71:MFS-28345-1 . c 37 N89-28841 \*

NAS 1.71:MFS-28345-2 . c 37 N89-28842 \*

NAS 1.71:MFS-28368-1 . c 75 N90-10717 \*

NAS 1.71:MFS-28370-1 . c 35 N89-28793 \*

NAS 1.71:MFS-28376-1 . c 14 N89-28546 \*

NAS 1.71:MFS-28383-1 . c 34 N90-17051 \*

NAS 1.71:MFS-28384-1 . c 37 N90-27112 \*

NAS 1.71:MFS-28420-1 . c 37 N90-27113 \*

NAS 1.71:MFS-28421-1 . c 18 N90-26861 \*

NAS 1.71:MFS-28425-1 . c 35 N90-26304 \*

NAS 1.71:MFS-28426-1 . c 54 N90-27261 \*

NAS 1.71:MFS-29291-1 . c 37 N89-12868 \*

NAS 1.71:MFS-29491-1 . c 31 N89-23738 \*

NAS 1.71:MSC-18578-1 . c 32 N85-21427 \*

NAS 1.71:MSC-20112-1 . c 37 N85-20338 \*

NAS 1.71:MSC-20275-1 . c 35 N85-21595 \*

NAS 1.71:MSC-20319-1 . c 37 N85-21849 \*

NAS 1.71:MSC-20761-1 . c 37 N87-15465 \*

NAS 1.71:MSC-20783-1 . c 35 N86-20756 \*

NAS 1.71:MSC-20865-1 . c 32 N87-18692 \*

NAS 1.71:MSC-20907-1 . c 37 N87-18818 \*

NAS 1.71:MSC-20964-1 . c 60 N87-14863 \*

NAS 1.71:MSC-21059-1 . c 35 N89-12843 \*

NAS 1.71:MSC-21082-1 . c 27 N87-29672 \*

NAS 1.71:MSC-21094-1 . c 35 N88-24941 \*

NAS 1.71:MSC-21095-1 . c 37 N89-12866 \*

NAS 1.71:MSC-21170-1 . c 17 N88-24662 \*

NAS 1.71:MSC-21171-1 . c 37 N88-23973 \*

NAS 1.71:MSC-21293-1 . c 51 N89-14666 \*

NAS 1.71:MSC-21294-1 . c 51 N89-13131 \*

NAS 1.71:MSC-21299-1 . c 20 N88-24684 \*

NAS 1.71:MSC-21327-1 . c 18 N90-11798 \*

NAS 1.71:MSC-21330-1 . c 16 N88-24660 \*

NAS 1.71:MSC-21332-1 . c 03 N89-11724 \*

NAS 1.71:MSC-21334-1 . c 32 N89-25360 \*

NAS 1.71:MSC-21348-1 . c 62 N89-24084 \*

NAS 1.71:MSC-21354-1 . c 37 N88-24969 \*

NAS 1.71:MSC-21360-1 . c 18 N89-25263 \*

NAS 1.71:MSC-21361-1 . c 51 N89-25557 \*

NAS 1.71:MSC-21364-1 . c 54 N89-13889 \*

NAS 1.71:MSC-21366-1	c 54	N89-12206 *	#	NAS 1.71:NPO-17630-1-CU	c 31	N89-29577 *	#	NASA-CASE-ARC-10444-1	c 16	N73-33397 *
NAS 1.71:MSC-21372-1	c 35	N89-12842 *	#	NAS 1.71:NPO-17633-1-CU	c 27	N90-15263 *	#	NASA-CASE-ARC-10445-1	c 31	N76-31365 *
NAS 1.71:MSC-21379-1-SB	c 61	N90-27340 *	#	NAS 1.71:NPO-17640-1-CU	c 33	N90-17011 *	#	NASA-CASE-ARC-10447-1	c 52	N74-22771 *
NAS 1.71:MSC-21387-1	c 61	N90-16411 *	#	NAS 1.71:NPO-17653-1-CU	c 51	N90-27239 *	#	NASA-CASE-ARC-10448-2	c 74	N75-12732 *
NAS 1.71:MSC-21408-1	c 37	N89-28829 *	#	NAS 1.71:NPO-17664-1-CU	c 62	N90-27384 *	#	NASA-CASE-ARC-10448-3	c 35	N77-14408 *
NAS 1.71:MSC-21420-1	c 18	N90-26858 *	#	NAS 1.71:NPO-17703-1-CU	c 74	N89-29191 *	#	NASA-CASE-ARC-10456-1	c 05	N75-12930 *
NAS 1.71:MSC-21428-1	c 33	N90-17008 *	#	NAS 1.71:NPO-17716-1-CU	c 62	N90-10608 *	#	NASA-CASE-ARC-10461-1	c 44	N74-33379 *
NAS 1.71:MSC-21434-1	c 37	N90-17138 *	#	NAS 1.71:NPO-17723-1-CU	c 76	N90-26685 *	#	NASA-CASE-ARC-10462-1	c 37	N74-27901 *
NAS 1.71:MSC-21485-1	c 61	N90-16410 *	#	NAS 1.71:NPO-17724-1-CU	c 76	N90-27517 *	#	NASA-CASE-ARC-10463-1	c 09	N73-32111 *
NAS 1.71:MSC-21469-1	c 37	N90-26340 *	#	NAS 1.71:NPO-17736-1-CU	c 76	N90-17455 *	#	NASA-CASE-ARC-10464-1	c 27	N74-12812 *
NAS 1.71:MSC-21470-1	c 09	N90-16771 *	#	NAS 1.71:NPO-17785-1-CU	c 37	N89-28846 *	#	NASA-CASE-ARC-10466-1	c 60	N75-13539 *
NAS 1.71:MSC-21476-1	c 37	N90-17137 *	#	NAS 1.71:NPO-17786-1-CU	c 35	N90-17104 *	#	NASA-CASE-ARC-10467-1	c 09	N73-14214 *
NAS 1.71:MSC-21487-1	c 25	N90-16887 *	#	NAS 1.71:NPO-17801-1-CU	c 37	N90-27110 *	#	NASA-CASE-ARC-10468-1	c 14	N73-33361 *
NAS 1.71:MSC-21502-1	c 37	N90-26341 *	#	NAS 1.71:NPO-17803-1-CU	c 62	N90-27385 *	#	NASA-CASE-ARC-10469-1	c 25	N75-12086 *
NAS 1.71:MSC-21503-1	c 27	N90-16925 *	#	NAS 1.71:NPO-17809-1-CU	c 33	N90-27041 *	#	NASA-CASE-ARC-10470-1	c 02	N73-26005 *
NAS 1.71:MSC-21504-1	c 18	N90-26859 *	#	NAS 1.71:NPO-17812-1-CU	c 76	N90-17456 *	#	NASA-CASE-ARC-10470-3	c 05	N76-29217 *
NAS 1.71:MSC-21534-1	c 18	N90-26660 *	#	NAS 1.71:NPO-17820-1-CU	c 04	N90-18379 *	#	NASA-CASE-ARC-10516-1	c 70	N74-21300 *
NAS 1.71:MSC-21539-1	c 37	N90-27111 *	#	NAS 1.71:NPO-17826-1-CU	c 27	N90-26952 *	#	NASA-CASE-ARC-10519-2	c 05	N75-25915 *
NAS 1.71:MSC-21540-1	c 37	N90-26342 *	#	NAS 1.71:NPO-17830-1-CU	c 33	N90-27042 *	#	NASA-CASE-ARC-10583-1	c 52	N76-29894 *
NAS 1.71:MSC-21542-1	c 20	N90-26073 *	#	NAS 1.71:NPO-17835-1-CU	c 76	N90-27518 *	#	NASA-CASE-ARC-10592-1	c 27	N74-21156 *
NAS 1.71:MSC-21560-1	c 61	N90-18852 *	#	NAS 1.71:NPO-17845-1-CU	c 61	N90-27341 *	#	NASA-CASE-ARC-10592-2	c 27	N76-32315 *
NAS 1.71:MSC-21629-1	c 54	N89-29027 *	#	NAS 1.71:NPO-17853-1-CU	c 32	N90-16975 *	#	NASA-CASE-ARC-10593-1	c 33	N74-27682 *
NAS 1.71:NPO-13556-1	c 35	N84-33766 *	#	NAS 1.71:NPO-17873-1-CU	c 24	N90-26880 *	#	NASA-CASE-ARC-10596-1	c 33	N74-21851 *
NAS 1.71:NPO-15155-1	c 74	N85-22139 *	#	NAS 1.71:NPO-17897-1-CU	c 32	N90-27015 *	#	NASA-CASE-ARC-10597-1	c 52	N74-20726 *
NAS 1.71:NPO-15295-1	c 60	N85-21992 *	#	NAS 1.71:NPO-17911-1-CU	c 33	N90-27040 *	#	NASA-CASE-ARC-10598-1	c 75	N74-30156 *
NAS 1.71:NPO-15341-1	c 35	N84-33769 *	#	NAS 1.71:NPO-17913-1-CU	c 32	N90-27016 *	#	NASA-CASE-ARC-10599-1	c 05	N73-26071 *
NAS 1.71:NPO-15430-1	c 46	N85-21846 *	#	NAS 1.71:NPO-17917-1-CU	c 74	N90-27488 *	#	NASA-CASE-ARC-10631-1	c 74	N76-20958 *
NAS 1.71:NPO-15433-1	c 32	N85-21428 *	#	NAS 1.71:NPO-17939-1-CU	c 37	N90-26339 *	#	NASA-CASE-ARC-10633-1	c 25	N74-26947 *
NAS 1.71:NPO-15466-1	c 71	N85-22104 *	#	NAS 1.71:NPO-17949-1-CU	c 60	N90-26518 *	#	NASA-CASE-ARC-10637-1	c 35	N75-16783 *
NAS 1.71:NPO-15483-1	c 37	N85-21650 *	#	NAS 1.71:NPO-17954-1-CU	c 76	N90-26684 *	#	NASA-CASE-ARC-10639-1	c 35	N76-13400 *
NAS 1.71:NPO-15493-2	c 35	N85-34373 *	#	NAS 1.71:NPO-17970-1-CU	c 60	N90-26519 *	#	NASA-CASE-ARC-10642-1	c 36	N78-14447 *
NAS 1.71:NPO-15494-2	c 35	N85-34373 *	#	NAS 1.71:NST-00007-1	c 43	N90-26384 *	#	NASA-CASE-ARC-10643-1	c 25	N75-12087 *
NAS 1.71:NPO-15519-1	c 32	N84-34651 *	#	NAS 1.71:SSC-00004	c 45	N89-28987 *	#	NASA-CASE-ARC-10710-1	c 09	N75-12969 *
NAS 1.71:NPO-15558-1	c 35	N84-34705 *	#	NAS 1.71:WLP-10055-2	c 37	N90-15443 *	#	NASA-CASE-ARC-10711-2	c 33	N76-21390 *
NAS 1.71:NPO-15560-1	c 33	N85-21491 *	#		c 35	N85-21598 *	#	NASA-CASE-ARC-10712-1	c 07	N74-33218 *
NAS 1.71:NPO-15644-1	c 35	N84-33767 *	#	NASA-CASE-ARC-10003-1	c 09	N71-25866 *	#	NASA-CASE-ARC-10714-1	c 27	N76-15310 *
NAS 1.71:NPO-15651-1	c 43	N85-21723 *	#	NASA-CASE-ARC-10009-1	c 15	N71-17822 *	#	NASA-CASE-ARC-10716-1	c 35	N77-20399 *
NAS 1.71:NPO-15753-1	c 27	N84-33589 *	#	NASA-CASE-ARC-10017-1	c 14	N72-29464 *	#	NASA-CASE-ARC-10721-1	c 27	N76-22376 *
NAS 1.71:NPO-15759-1	c 35	N85-21596 *	#	NASA-CASE-ARC-10020	c 10	N72-17172 *	#	NASA-CASE-ARC-10722-1	c 51	N75-25503 *
NAS 1.71:NPO-15790-1	c 36	N85-21631 *	#	NASA-CASE-ARC-10030	c 09	N71-12521 *	#	NASA-CASE-ARC-10753-1	c 54	N75-27760 *
NAS 1.71:NPO-15801-1	c 74	N85-23396 *	#	NASA-CASE-ARC-10042-2	c 10	N72-11256 *	#	NASA-CASE-ARC-10754-1	c 07	N75-24736 *
NAS 1.71:NPO-15808-1	c 44	N84-34782 *	#	NASA-CASE-ARC-10043-1	c 05	N72-11193 *	#	NASA-CASE-ARC-10755-2	c 34	N76-27517 *
NAS 1.71:NPO-15851-1	c 37	N85-21652 *	#	NASA-CASE-ARC-10050	c 03	N71-33409 *	#	NASA-CASE-ARC-10756-1	c 54	N77-32721 *
NAS 1.71:NPO-15920-1	c 33	N85-21493 *	#	NASA-CASE-ARC-10097-2	c 07	N73-25160 *	#	NASA-CASE-ARC-10760-1	c 25	N76-22323 *
NAS 1.71:NPO-16022-1	c 71	N85-22105 *	#	NASA-CASE-ARC-10098-1	c 06	N71-24739 *	#	NASA-CASE-ARC-10761-1	c 07	N77-18154 *
NAS 1.71:NPO-16027-1	c 35	N85-21597 *	#	NASA-CASE-ARC-10099-1	c 18	N71-15469 *	#	NASA-CASE-ARC-10802-1	c 35	N75-30502 *
NAS 1.71:NPO-16233-1	c 37	N86-20801 *	#	NASA-CASE-ARC-10100-1	c 05	N71-24738 *	#	NASA-CASE-ARC-10806-1	c 35	N75-29381 *
NAS 1.71:NPO-16306-1-CU	c 76	N85-30934 *	#	NASA-CASE-ARC-10101-1	c 09	N71-33109 *	#	NASA-CASE-ARC-10807-1	c 05	N77-17029 *
NAS 1.71:NPO-16420-1	c 33	N86-20681 *	#	NASA-CASE-ARC-10105	c 09	N72-17153 *	#	NASA-CASE-ARC-10808-1	c 09	N76-24280 *
NAS 1.71:NPO-16464-1-CU	c 60	N86-24224 *	#	NASA-CASE-ARC-10106-1	c 09	N72-17153 *	#	NASA-CASE-ARC-10810-1	c 33	N76-19339 *
NAS 1.71:NPO-16494-1-CU	c 34	N85-29182 *	#	NASA-CASE-ARC-10131-1	c 28	N72-22769 *	#	NASA-CASE-ARC-10812-1	c 07	N83-33884 *
NAS 1.71:NPO-16584-1-CU	c 76	N86-25269 *	#	NASA-CASE-ARC-10132-1	c 15	N71-27754 *	#	NASA-CASE-ARC-10813-1	c 27	N76-16230 *
NAS 1.71:NPO-16632-1-CU	c 32	N87-15390 *	#	NASA-CASE-ARC-10133-1	c 09	N71-24597 *	#	NASA-CASE-ARC-10814-2	c 07	N80-26298 *
NAS 1.71:NPO-16784-1	c 33	N87-10231 *	#	NASA-CASE-ARC-10134	c 30	N72-17873 *	#	NASA-CASE-ARC-10816-1	c 35	N76-24525 *
NAS 1.71:NPO-16869-1	c 74	N86-33138 *	#	NASA-CASE-ARC-10136-1	c 09	N72-22202 *	#	NASA-CASE-ARC-10820-1	c 35	N78-19466 *
NAS 1.71:NPO-16882-1-CU	c 33	N88-24863 *	#	NASA-CASE-ARC-10137-1	c 09	N71-28468 *	#	NASA-CASE-ARC-10849-1	c 17	N76-29347 *
NAS 1.71:NPO-16892-1-CU	c 37	N87-14704 *	#	NASA-CASE-ARC-10138-1	c 14	N72-24477 *	#	NASA-CASE-ARC-10855-1	c 52	N77-10780 *
NAS 1.71:NPO-16932-1	c 33	N87-15413 *	#	NASA-CASE-ARC-10140-1	c 15	N71-17653 *	#	NASA-CASE-ARC-10892-2	c 27	N79-14214 *
NAS 1.71:NPO-16985-1-CU	c 31	N88-24814 *	#	NASA-CASE-ARC-10153	c 05	N71-28619 *	#	NASA-CASE-ARC-10896-1	c 35	N78-19465 *
NAS 1.71:NPO-16987-1-CU	c 32	N88-30001 *	#	NASA-CASE-ARC-10154-1	c 14	N72-22440 *	#	NASA-CASE-ARC-10897-1	c 33	N73-31404 *
NAS 1.71:NPO-16989-1-CU	c 35	N89-28794 *	#	NASA-CASE-ARC-10160-1	c 23	N72-27728 *	#	NASA-CASE-ARC-10898-1	c 35	N77-18417 *
NAS 1.71:NPO-17024-1-CU	c 35	N88-24943 *	#	NASA-CASE-ARC-10176-1	c 15	N72-21464 *	#	NASA-CASE-ARC-10899-1	c 60	N77-19760 *
NAS 1.71:NPO-17134-1-CU	c 33	N88-24864 *	#	NASA-CASE-ARC-10178-1	c 09	N72-17152 *	#	NASA-CASE-ARC-10900-1	c 35	N77-24454 *
NAS 1.71:NPO-17139-1-CU	c 74	N88-25301 *	#	NASA-CASE-ARC-10179-1	c 21	N72-22619 *	#	NASA-CASE-ARC-10903-1	c 09	N78-18083 *
NAS 1.71:NPO-17144-1-CU	c 74	N88-25305 *	#	NASA-CASE-ARC-10180-1	c 27	N74-12814 *	#	NASA-CASE-ARC-10905-1	c 37	N77-13418 *
NAS 1.71:NPO-17184-1-CU	c 32	N88-26541 *	#	NASA-CASE-ARC-10192	c 09	N72-21245 *	#	NASA-CASE-ARC-10907-1	c 37	N75-32465 *
NAS 1.71:NPO-17197-1-CU	c 62	N89-29976 *	#	NASA-CASE-ARC-10194-1	c 23	N73-20741 *	#	NASA-CASE-ARC-10911-1	c 35	N77-20400 *
NAS 1.71:NPO-17204-1-CU	c 34	N90-26292 *	#	NASA-CASE-ARC-10196-1	c 18	N73-13562 *	#	NASA-CASE-ARC-10912-1	c 34	N77-19353 *
NAS 1.71:NPO-17207-1-CU	c 74	N88-25304 *	#	NASA-CASE-ARC-10197-1	c 33	N74-17929 *	#	NASA-CASE-ARC-10913-1	c 24	N78-15180 *
NAS 1.71:NPO-17233-1-CU	c 33	N88-29095 *	#	NASA-CASE-ARC-10198	c 34	N78-17336 *	#	NASA-CASE-ARC-10915-2	c 27	N79-18052 *
NAS 1.71:NPO-17275-1-CU	c 37	N89-29750 *	#	NASA-CASE-ARC-10199	c 34	N78-17337 *	#	NASA-CASE-ARC-10916-1	c 52	N78-10686 *
NAS 1.71:NPO-17282-1-CU	c 36	N89-12856 *	#	NASA-CASE-ARC-10263-1	c 14	N72-22438 *	#	NASA-CASE-ARC-10917-1	c 51	N78-27733 *
NAS 1.71:NPO-17291-1-CU	c 34	N88-23946 *	#	NASA-CASE-ARC-10264-1	c 09	N73-20231 *	#	NASA-CASE-ARC-10932-1	c 74	N76-22993 *
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NASA-CASE-GSC-13008-1	c 27	N88-23894 *	NASA-CASE-KSC-11042-1	c 09	N82-29330 *	NASA-CASE-LAR-10496-1	c 14	N72-22437 *
NASA-CASE-GSC-13008-2	c 27	N90-16949 *	NASA-CASE-KSC-11042-2	c 02	N81-26073 *	NASA-CASE-LAR-10503-1	c 09	N72-21248 *
NASA-CASE-GSC-13018-1	c 33	N87-21232 *	NASA-CASE-KSC-11047-1	c 74	N78-14889 *	NASA-CASE-LAR-10507-1	c 11	N72-25284 *
NASA-CASE-GSC-13019-1	c 34	N88-29133 *	NASA-CASE-KSC-11048-1	c 62	N81-24779 *	NASA-CASE-LAR-10511-1	c 09	N72-28172 *
NASA-CASE-GSC-13112-1	c 31	N89-29578 *	NASA-CASE-KSC-11057-1	c 33	N79-14305 *	NASA-CASE-LAR-10513-1	c 07	N72-25170 *
NASA-CASE-GSC-13173-1	c 33	N90-23635 *	NASA-CASE-KSC-11064-1	c 31	N81-14137 *	NASA-CASE-LAR-10523-1	c 14	N72-22444 *
NASA-CASE-GSC-13199-1	c 27	N90-23541 *	NASA-CASE-KSC-11065-1	c 33	N81-26359 *	NASA-CASE-LAR-10539-1	c 17	N73-12547 *
			NASA-CASE-KSC-11069-1	c 52	N78-26772 *	NASA-CASE-LAR-10541-1	c 15	N72-32487 *
NASA-CASE-HQN-00573-1	c 37	N79-33488 *	NASA-CASE-KSC-11076-1	c 34	N81-26402 *	NASA-CASE-LAR-10544-1	c 37	N74-13178 *
NASA-CASE-HQN-00936	c 31	N71-29050 *	NASA-CASE-KSC-11085-1	c 54	N81-24724 *	NASA-CASE-LAR-10545-1	c 09	N72-21244 *
NASA-CASE-HQN-00937	c 07	N71-28979 *	NASA-CASE-KSC-11097-1	c 27	N82-33520 *	NASA-CASE-LAR-10548-1	c 11	N72-25287 *
NASA-CASE-HQN-00938	c 33	N71-29053 *	NASA-CASE-KSC-11099-1	c 47	N82-24779 *	NASA-CASE-LAR-10547-1	c 31	N74-13177 *
NASA-CASE-HQN-10037-1	c 14	N73-27376 *	NASA-CASE-KSC-11104-1	c 74	N83-29032 *	NASA-CASE-LAR-10549-1	c 31	N73-13888 *
NASA-CASE-HQN-10069	c 33	N75-27251 *	NASA-CASE-KSC-11155-1	c 04	N86-18304 *	NASA-CASE-LAR-10550-1	c 09	N74-30597 *
NASA-CASE-HQN-10274-1	c 27	N82-29451 *	NASA-CASE-KSC-11170-1	c 33	N83-36356 *	NASA-CASE-LAR-10551-1	c 25	N74-12913 *
NASA-CASE-HQN-10328-2	c 27	N82-29454 *	NASA-CASE-KSC-11218-1	c 09	N85-19990 *	NASA-CASE-LAR-10557	c 02	N72-11018 *
NASA-CASE-HQN-10384	c 06	N71-27363 *	NASA-CASE-KSC-11282-1	c 85	N87-21755 *	NASA-CASE-LAR-10574-1	c 11	N73-13257 *
NASA-CASE-HQN-10439	c 21	N72-21624 *	NASA-CASE-KSC-11285-1	c 32	N86-27513 *	NASA-CASE-LAR-10578-1	c 12	N73-25262 *
NASA-CASE-HQN-10462	c 25	N75-29192 *	NASA-CASE-KSC-11304-2	c 28	N86-23744 *	NASA-CASE-LAR-10585-1	c 02	N76-22154 *
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NASA-CASE-HQN-10541-1	c 07	N71-26291 *	NASA-CASE-KSC-11388-1	c 37	N89-13768 *	NASA-CASE-LAR-10590-1	c 15	N70-26819 *
NASA-CASE-HQN-10541-2	c 15	N71-27135 *	NASA-CASE-KSC-11386-1	c 35	N90-22023 *	NASA-CASE-LAR-10595-1	c 35	N74-16135 *
NASA-CASE-HQN-10541-3	c 23	N72-23695 *	NASA-CASE-KSC-11387-1	c 29	N90-20236 *	NASA-CASE-LAR-10612-1	c 12	N73-28144 *
NASA-CASE-HQN-10541-4	c 16	N71-27183 *	NASA-CASE-KSC-11392-1	c 74	N90-22383 *	NASA-CASE-LAR-10620-1	c 09	N72-25255 *
NASA-CASE-HQN-10542-1	c 74	N75-25706 *				NASA-CASE-LAR-10623-1	c 14	N73-30395 *
NASA-CASE-HQN-10595-1	c 27	N82-29455 *	NASA-CASE-LAR-02743	c 14	N73-32324 *	NASA-CASE-LAR-10628-1	c 19	N74-21015 *
NASA-CASE-HQN-10638-1	c 15	N73-30460 *	NASA-CASE-LAR-10000	c 14	N73-30394 *	NASA-CASE-LAR-10629-1	c 35	N75-33367 *
NASA-CASE-HQN-10654-1	c 16	N73-13489 *	NASA-CASE-LAR-10007-1	c 05	N71-11195 *	NASA-CASE-LAR-10634-1	c 37	N74-18123 *
NASA-CASE-HQN-10683	c 14	N71-34389 *	NASA-CASE-LAR-10031	c 15	N72-22484 *	NASA-CASE-LAR-10642-1	c 07	N74-31270 *
NASA-CASE-HQN-10703	c 21	N73-13843 *	NASA-CASE-LAR-10056	c 05	N71-12351 *	NASA-CASE-LAR-10668-1	c 06	N73-16106 *
NASA-CASE-HQN-10740-1	c 72	N74-19310 *	NASA-CASE-LAR-10061-1	c 15	N72-31483 *	NASA-CASE-LAR-10670-1	c 06	N73-30097 *
NASA-CASE-HQN-10756-1	c 14	N72-25428 *	NASA-CASE-LAR-10073-1	c 37	N76-24575 *	NASA-CASE-LAR-10670-2	c 15	N74-27380 *
NASA-CASE-HQN-10780	c 14	N71-30265 *	NASA-CASE-LAR-10076-1	c 05	N73-20137 *	NASA-CASE-LAR-10682-1	c 02	N73-26004 *
NASA-CASE-HQN-10781	c 23	N71-30292 *	NASA-CASE-LAR-10083-1	c 15	N71-27006 *	NASA-CASE-LAR-10686	c 14	N71-28935 *
NASA-CASE-HQN-10790-1	c 36	N74-11313 *	NASA-CASE-LAR-10089-1	c 34	N74-23066 *	NASA-CASE-LAR-10688-1	c 37	N74-21056 *
NASA-CASE-HQN-10792-1	c 33	N74-11049 *	NASA-CASE-LAR-10098	c 32	N71-26681 *	NASA-CASE-LAR-10717-1	c 21	N73-30641 *
NASA-CASE-HQN-10832-1	c 71	N74-21014 *	NASA-CASE-LAR-10102-1	c 05	N72-23085 *	NASA-CASE-LAR-10726-1	c 14	N73-20475 *
NASA-CASE-HQN-10841-1	c 73	N78-19920 *	NASA-CASE-LAR-10103-1	c 15	N73-14468 *	NASA-CASE-LAR-10728-1	c 14	N73-12445 *
NASA-CASE-HQN-10844-1	c 36	N75-19653 *	NASA-CASE-LAR-10105-1	c 34	N74-15652 *	NASA-CASE-LAR-10730-1	c 33	N74-10223 *
NASA-CASE-HQN-10862-1	c 44	N76-29699 *	NASA-CASE-LAR-10106-1	c 15	N71-27169 *	NASA-CASE-LAR-10739-1	c 14	N73-16484 *
NASA-CASE-HQN-10876-1	c 33	N76-27473 *	NASA-CASE-LAR-10121-1	c 15	N71-26721 *	NASA-CASE-LAR-10753-1	c 08	N74-30421 *
NASA-CASE-HQN-10880-1	c 17	N78-17140 *	NASA-CASE-LAR-10129-1	c 08	N73-20217 *	NASA-CASE-LAR-10756-1	c 32	N73-26910 *
NASA-CASE-HQN-10888-1	c 44	N79-14527 *	NASA-CASE-LAR-10129-2	c 15	N73-25512 *	NASA-CASE-LAR-10765-1	c 32	N73-20740 *
NASA-CASE-HQN-10931-2	c 27	N82-29452 *	NASA-CASE-LAR-10135-1	c 37	N74-20083 *	NASA-CASE-LAR-10773-3	c 51	N77-25769 *
			NASA-CASE-LAR-10137-1	c 09	N78-21083 *	NASA-CASE-LAR-10774	c 10	N71-13545 *
NASA-CASE-KSC-10002	c 10	N71-25865 *	NASA-CASE-LAR-10137-1	c 09	N72-22204 *	NASA-CASE-LAR-10776-1	c 02	N74-10034 *
NASA-CASE-KSC-10003	c 10	N73-13235 *	NASA-CASE-LAR-10163-1	c 09	N72-25247 *	NASA-CASE-LAR-10782-1	c 31	N74-14133 *
NASA-CASE-KSC-10020	c 10	N71-27338 *	NASA-CASE-LAR-10169-1	c 33	N74-22865 *	NASA-CASE-LAR-10782-2	c 31	N75-13111 *
NASA-CASE-KSC-10031	c 15	N72-22486 *	NASA-CASE-LAR-10170-1	c 37	N74-11301 *	NASA-CASE-LAR-10799-2	c 34	N76-17317 *
NASA-CASE-KSC-10108	c 14	N73-25461 *	NASA-CASE-LAR-10173-1	c 27	N71-14090 *	NASA-CASE-LAR-10800-1	c 33	N72-27959 *
NASA-CASE-KSC-10126	c 11	N71-24985 *	NASA-CASE-LAR-10176-1	c 14	N72-20380 *	NASA-CASE-LAR-10805-2	c 34	N77-18382 *
NASA-CASE-KSC-10162	c 09	N72-11225 *	NASA-CASE-LAR-10180-1	c 06	N71-13461 *	NASA-CASE-LAR-10806-1	c 35	N74-32877 *
NASA-CASE-KSC-10184	c 07	N71-33108 *	NASA-CASE-LAR-10184	c 14	N72-22445 *	NASA-CASE-LAR-10812-1	c 09	N74-17955 *
NASA-CASE-KSC-10188	c 11	N71-28629 *	NASA-CASE-LAR-10193-1	c 15	N71-27146 *	NASA-CASE-LAR-10815-1	c 18	N72-22520 *
NASA-CASE-KSC-10242	c 15	N72-23497 *	NASA-CASE-LAR-10194-1	c 34	N74-30608 *	NASA-CASE-LAR-10836-1	c 26	N72-27784 *
NASA-CASE-KSC-10278	c 05	N72-16015 *	NASA-CASE-LAR-10195-1	c 15	N73-19458 *	NASA-CASE-LAR-10841-1	c 31	N74-27900 *
NASA-CASE-KSC-10294	c 14	N72-18411 *	NASA-CASE-LAR-10209-1	c 15	N72-16330 *	NASA-CASE-LAR-10855-1	c 14	N73-13415 *
NASA-CASE-KSC-10326	c 08	N72-21197 *	NASA-CASE-LAR-10204	c 14	N71-27215 *	NASA-CASE-LAR-10862-1	c 35	N74-15092 *
NASA-CASE-KSC-10392	c 07	N73-26117 *	NASA-CASE-LAR-10208-1	c 35	N76-18400 *	NASA-CASE-LAR-10868-1	c 33	N74-11050 *
NASA-CASE-KSC-10393	c 09	N72-21247 *	NASA-CASE-LAR-10218-1	c 09	N70-34559 *	NASA-CASE-LAR-10894-1	c 18	N73-14584 *
NASA-CASE-KSC-10397	c 08	N72-25206 *	NASA-CASE-LAR-10226-1	c 14	N73-19419 *	NASA-CASE-LAR-10900-1	c 37	N74-23064 *
NASA-CASE-KSC-10513	c 15	N72-25453 *	NASA-CASE-LAR-10241-1	c 54	N74-14845 *	NASA-CASE-LAR-10907-1	c 35	N76-29551 *
NASA-CASE-KSC-10521	c 07	N73-20176 *	NASA-CASE-LAR-10249-1	c 02	N71-26110 *	NASA-CASE-LAR-10910-1	c 35	N74-13132 *
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NASA-CASE-KSC-10595	c 08	N73-12178 *	NASA-CASE-LAR-10256-1	c 85	N74-34672 *	NASA-CASE-LAR-10941-1	c 37	N74-21057 *
NASA-CASE-KSC-10615	c 15	N73-12486 *	NASA-CASE-LAR-10270-1	c 32	N72-25877 *	NASA-CASE-LAR-10941-2	c 37	N79-13364 *
NASA-CASE-KSC-10622-1	c 31	N72-21893 *	NASA-CASE-LAR-10274-1	c 14	N71-17626 *	NASA-CASE-LAR-10953-1	c 17	N73-27448 *
NASA-CASE-KSC-10626	c 14	N73-27378 *	NASA-CASE-LAR-10276-1	c 09	N75-15662 *	NASA-CASE-LAR-10970-1	c 33	N76-14372 *
NASA-CASE-KSC-10639	c 15	N73-26472 *	NASA-CASE-LAR-10294-1	c 26	N72-28762 *	NASA-CASE-LAR-10994-1	c 24	N75-13032 *
NASA-CASE-KSC-10644	c 09	N72-27227 *	NASA-CASE-LAR-10295-1	c 35	N74-21062 *	NASA-CASE-LAR-11021-1	c 32	N76-14321 *
NASA-CASE-KSC-10647-1	c 10	N72-31273 *	NASA-CASE-LAR-10305	c 14	N71-26137 *	NASA-CASE-LAR-11027-1	c 35	N74-18088 *



NASA-CASE-LAR-11042-1	c 33	N75-27252 *	NASA-CASE-LAR-12018-1	c 20	N78-24275 *	NASA-CASE-LAR-12723-2	c 27	N84-22746 *
NASA-CASE-LAR-11051-1	c 15	N76-14158 *	NASA-CASE-LAR-12019-1	c 24	N78-17150 *	NASA-CASE-LAR-12728-1	c 35	N83-32026 *
NASA-CASE-LAR-11053-1	c 25	N74-18551 *	NASA-CASE-LAR-12027-1	c 39	N79-22537 *	NASA-CASE-LAR-12738-2	c 37	N85-30335 *
NASA-CASE-LAR-11059-1	c 76	N75-12810 *	NASA-CASE-LAR-12045-1	c 34	N77-24423 *	NASA-CASE-LAR-12743-1	c 35	N84-28019 *
NASA-CASE-LAR-11069-1	c 35	N75-12272 *	NASA-CASE-LAR-12046-1	c 25	N78-15210 *	NASA-CASE-LAR-12751-1	c 15	N84-16231 *
NASA-CASE-LAR-11071-1	c 35	N75-19611 *	NASA-CASE-LAR-12052-1	c 18	N81-29152 *	NASA-CASE-LAR-12772-1	c 33	N83-16626 *
NASA-CASE-LAR-11074-1	c 51	N75-13502 *	NASA-CASE-LAR-12054-1	c 27	N79-33316 *	NASA-CASE-LAR-12775-1	c 27	N83-28240 *
NASA-CASE-LAR-11110-1	c 34	N75-26282 *	NASA-CASE-LAR-12054-2	c 27	N81-14078 *	NASA-CASE-LAR-12775-2	c 27	N85-21349 *
NASA-CASE-LAR-11112-1	c 32	N76-15330 *	NASA-CASE-LAR-12065-1	c 24	N81-14000 *	NASA-CASE-LAR-12785-1	c 37	N84-16561 *
NASA-CASE-LAR-11138	c 12	N71-20436 *	NASA-CASE-LAR-12065-2	c 24	N81-33235 *	NASA-CASE-LAR-12786-1	c 37	N84-28085 *
NASA-CASE-LAR-11139-1	c 35	N74-32878 *	NASA-CASE-LAR-12077-1	c 31	N81-25259 *	NASA-CASE-LAR-12787-2	c 08	N85-19985 *
NASA-CASE-LAR-11141-1	c 07	N74-32418 *	NASA-CASE-LAR-12095-1	c 31	N81-25258 *	NASA-CASE-LAR-12801-1	c 37	N88-23982 *
NASA-CASE-LAR-11144-1	c 25	N75-26043 *	NASA-CASE-LAR-12099-1	c 27	N80-16158 *	NASA-CASE-LAR-12807-1	c 24	N84-11214 *
NASA-CASE-LAR-11155-1	c 35	N74-15091 *	NASA-CASE-LAR-12106-1	c 71	N78-14867 *	NASA-CASE-LAR-12838-1	c 27	N83-34040 *
NASA-CASE-LAR-11173-1	c 35	N75-19614 *	NASA-CASE-LAR-12147-1	c 31	N79-11246 *	NASA-CASE-LAR-12843-1	c 02	N84-11136 *
NASA-CASE-LAR-11201-1	c 35	N78-24515 *	NASA-CASE-LAR-12148-1	c 44	N82-24640 *	NASA-CASE-LAR-12847-1	c 33	N83-16633 *
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NASA-CASE-LAR-11224-1	c 37	N76-18456 *	NASA-CASE-LAR-12178-1	c 74	N80-21138 *	NASA-CASE-LAR-12864-1	c 37	N85-30336 *
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NASA-CASE-LAR-11310-1	c 07	N77-28118 *	NASA-CASE-LAR-12196-1	c 33	N81-26358 *	NASA-CASE-LAR-12882-1	c 35	N84-12445 *
NASA-CASE-LAR-11326-1	c 35	N75-33368 *	NASA-CASE-LAR-12205-1	c 44	N80-20810 *	NASA-CASE-LAR-12883-1	c 71	N83-17235 *
NASA-CASE-LAR-11341-1	c 36	N75-19655 *	NASA-CASE-LAR-12215-1	c 08	N79-23097 *	NASA-CASE-LAR-12884-1	c 18	N84-33450 *
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NASA-CASE-LAR-11354-1	c 35	N75-27330 *	NASA-CASE-LAR-12250-1	c 14	N81-26181 *	NASA-CASE-LAR-12893-1	c 76	N85-30923 *
NASA-CASE-LAR-11361-1	c 44	N77-22607 *	NASA-CASE-LAR-12251-1	c 74	N80-27185 *	NASA-CASE-LAR-12894-1	c 27	N85-20125 *
NASA-CASE-LAR-11370-1	c 35	N80-28686 *	NASA-CASE-LAR-12259-2	c 54	N86-22112 *	NASA-CASE-LAR-12923-1	c 37	N84-12493 *
NASA-CASE-LAR-11387-1	c 04	N76-20114 *	NASA-CASE-LAR-12260-1	c 35	N79-10390 *	NASA-CASE-LAR-12931-1	c 27	N84-22747 *
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NASA-CASE-LAR-11397-1	c 27	N75-29263 *	NASA-CASE-LAR-12269-1	c 35	N80-18358 *	NASA-CASE-LAR-12966-1	c 35	N85-30282 *
NASA-CASE-LAR-11405-1	c 45	N78-31714 *	NASA-CASE-LAR-12275-1	c 35	N79-18296 *	NASA-CASE-LAR-12967-1	c 35	N84-22832 *
NASA-CASE-LAR-11428-1	c 35	N74-34857 *	NASA-CASE-LAR-12285-1	c 35	N80-28687 *	NASA-CASE-LAR-12968-1	c 60	N86-21154 *
NASA-CASE-LAR-11434-1	c 35	N76-22509 *	NASA-CASE-LAR-12304-1	c 35	N80-20559 *	NASA-CASE-LAR-12971-1	c 47	N84-28292 *
NASA-CASE-LAR-11435-1	c 35	N76-15432 *	NASA-CASE-LAR-12308-1	c 35	N81-29407 *	NASA-CASE-LAR-12979-1	c 05	N85-21147 *
NASA-CASE-LAR-11458-1	c 35	N76-16392 *	NASA-CASE-LAR-12315-1	c 37	N82-24490 *	NASA-CASE-LAR-12980-1	c 27	N84-22749 *
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NASA-CASE-LAR-11476-1	c 07	N76-27232 *	NASA-CASE-LAR-12321-1	c 35	N82-24470 *	NASA-CASE-LAR-12995-1	c 35	N84-22933 *
NASA-CASE-LAR-11490-1	c 39	N78-16387 *	NASA-CASE-LAR-12328-1	c 02	N81-14968 *	NASA-CASE-LAR-13006-1	c 17	N87-16883 *
NASA-CASE-LAR-11500-1	c 35	N76-24523 *	NASA-CASE-LAR-12328-1	c 36	N82-32712 *	NASA-CASE-LAR-13009-1	c 37	N85-29285 *
NASA-CASE-LAR-11549-1	c 37	N77-11397 *	NASA-CASE-LAR-12344-1	c 43	N80-18498 *	NASA-CASE-LAR-13009-2	c 37	N87-22976 *
NASA-CASE-LAR-11551-1	c 44	N80-29834 *	NASA-CASE-LAR-12361-1	c 37	N83-19091 *	NASA-CASE-LAR-13014-1	c 09	N85-21178 *
NASA-CASE-LAR-11552-1	c 35	N76-14429 *	NASA-CASE-LAR-12363-1	c 35	N82-31659 *	NASA-CASE-LAR-13018-1	c 07	N85-35194 *
NASA-CASE-LAR-11563-1	c 37	N77-23482 *	NASA-CASE-LAR-12363-2	c 33	N83-24763 *	NASA-CASE-LAR-13028-1	c 52	N85-30618 *
NASA-CASE-LAR-11570-1	c 34	N76-18364 *	NASA-CASE-LAR-12372-1	c 37	N82-18601 *	NASA-CASE-LAR-13040-1	c 37	N85-29286 *
NASA-CASE-LAR-11575-1	c 02	N76-16014 *	NASA-CASE-LAR-12375-1	c 32	N79-24203 *	NASA-CASE-LAR-13053-1	c 43	N83-29783 *
NASA-CASE-LAR-11607-1	c 32	N77-14292 *	NASA-CASE-LAR-12393-1	c 34	N83-34221 *	NASA-CASE-LAR-13065-1	c 35	N85-20295 *
NASA-CASE-LAR-11617-2	c 35	N78-32397 *	NASA-CASE-LAR-12396-1	c 02	N84-28732 *	NASA-CASE-LAR-13076-1	c 08	N85-35200 *
NASA-CASE-LAR-11645-1	c 02	N77-10001 *	NASA-CASE-LAR-12406-1	c 05	N81-26114 *	NASA-CASE-LAR-13081-1	c 37	N86-32737 *
NASA-CASE-LAR-11648-1	c 35	N77-14407 *	NASA-CASE-LAR-12412-1	c 08	N82-24205 *	NASA-CASE-LAR-13098-1	c 31	N86-19479 *
NASA-CASE-LAR-11649-1	c 51	N77-27677 *	NASA-CASE-LAR-12441-1	c 09	N82-23254 *	NASA-CASE-LAR-13100-1	c 37	N87-23982 *
NASA-CASE-LAR-11658-1	c 37	N77-14478 *	NASA-CASE-LAR-12458-1	c 44	N83-21503 *	NASA-CASE-LAR-13111-1	c 71	N87-21652 *
NASA-CASE-LAR-11667-1	c 52	N76-19785 *	NASA-CASE-LAR-12465-1	c 33	N82-26572 *	NASA-CASE-LAR-13113-1	c 31	N87-25492 *
NASA-CASE-LAR-11674-1	c 07	N76-18117 *	NASA-CASE-LAR-12468-1	c 08	N82-32373 *	NASA-CASE-LAR-13117-1	c 37	N86-25789 *
NASA-CASE-LAR-11675-1	c 45	N76-17656 *	NASA-CASE-LAR-12469-1	c 35	N83-21311 *	NASA-CASE-LAR-13118-2	c 27	N87-16907 *
NASA-CASE-LAR-11688-1	c 24	N82-26384 *	NASA-CASE-LAR-12471-1	c 52	N82-29862 *	NASA-CASE-LAR-13134-2	c 07	N87-16828 *
NASA-CASE-LAR-11690-1	c 35	N80-14371 *	NASA-CASE-LAR-12474-1	c 35	N82-26628 *	NASA-CASE-LAR-13135-1	c 27	N86-19456 *
NASA-CASE-LAR-11695-2	c 37	N81-24443 *	NASA-CASE-LAR-12482-1	c 37	N82-32732 *	NASA-CASE-LAR-13150-1	c 24	N87-27742 *
NASA-CASE-LAR-11709-1	c 37	N76-27567 *	NASA-CASE-LAR-12495-1	c 44	N83-28573 *	NASA-CASE-LAR-13151-1	c 33	N87-21235 *
NASA-CASE-LAR-11711-1	c 74	N78-17866 *	NASA-CASE-LAR-12513-1	c 44	N82-32841 *	NASA-CASE-LAR-13153-1	c 71	N86-21276 *
NASA-CASE-LAR-11726-1	c 37	N76-27568 *	NASA-CASE-LAR-12518-1	c 06	N86-27280 *	NASA-CASE-LAR-13155-1	c 05	N88-19310 *
NASA-CASE-LAR-11729-1	c 34	N79-12359 *	NASA-CASE-LAR-12520-1	c 51	N81-28698 *	NASA-CASE-LAR-13169-1	c 37	N86-25791 *
NASA-CASE-LAR-11745-1	c 32	N80-29539 *	NASA-CASE-LAR-12531-1	c 35	N83-29651 *	NASA-CASE-LAR-13173-1	c 05	N87-14314 *
NASA-CASE-LAR-11782-1	c 74	N77-20882 *	NASA-CASE-LAR-12532-1	c 09	N82-11088 *	NASA-CASE-LAR-13181-1	c 31	N85-29083 *
NASA-CASE-LAR-11797-1	c 05	N81-19087 *	NASA-CASE-LAR-12541-1	c 05	N84-22551 *	NASA-CASE-LAR-13198-1	c 37	N87-23983 *
NASA-CASE-LAR-11821-1	c 26	N80-28492 *	NASA-CASE-LAR-12552-1	c 35	N82-11431 *	NASA-CASE-LAR-13202-1	c 33	N89-23942 *
NASA-CASE-LAR-11825-1	c 35	N77-22449 *	NASA-CASE-LAR-12562-1	c 08	N81-26152 *	NASA-CASE-LAR-13215-1	c 02	N89-14224 *
NASA-CASE-LAR-11827-1	c 32	N77-10392 *	NASA-CASE-LAR-12568-1	c 34	N85-21568 *	NASA-CASE-LAR-13220-1	c 34	N86-12547 *
NASA-CASE-LAR-11828-1	c 27	N78-32261 *	NASA-CASE-LAR-12592-1	c 36	N82-13415 *	NASA-CASE-LAR-13225-1	c 24	N89-14258 *
NASA-CASE-LAR-11855-1	c 37	N81-14319 *	NASA-CASE-LAR-12595-1	c 33	N82-26571 *	NASA-CASE-LAR-13225-2	c 24	N90-25197 *
NASA-CASE-LAR-11859-1	c 35	N79-14349 *	NASA-CASE-LAR-12602-1	c 39	N83-32081 *	NASA-CASE-LAR-13226-1	c 27	N85-34282 *
NASA-CASE-LAR-11888-2	c 08	N79-14108 *	NASA-CASE-LAR-12615-1	c 05	N84-12154 *	NASA-CASE-LAR-13230-1	c 24	N84-34571 *
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NASA-CASE-LAR-11883-1	c 09	N77-27131 *	NASA-CASE-LAR-12624-1	c 01	N83-35992 *	NASA-CASE-LAR-13243-1	c 35	N85-34375 *
NASA-CASE-LAR-11889-1	c 35	N79-26372 *	NASA-CASE-LAR-12630-1	c 06	N84-27733 *	NASA-CASE-LAR-13250-1	c 37	N86-27630 *
NASA-CASE-LAR-11889-2	c 37	N78-27424 *	NASA-CASE-LAR-12633-1	c 33	N82-24416 *	NASA-CASE-LAR-13254-1	c 35	N86-29174 *
NASA-CASE-LAR-11898-1	c 24	N78-10214 *	NASA-CASE-LAR-12638-1	c 04	N84-14132 *	NASA-CASE-LAR-13255-1	c 02	N87-16793 *
NASA-CASE-LAR-11898-2	c 24	N78-17149 *	NASA-CASE-LAR-12640-1	c 27	N82-11206 *	NASA-CASE-LAR-13256-1	c 36	N86-29204 *
NASA-CASE-LAR-11900-1	c 37	N79-14382 *	NASA-CASE-LAR-12642-1	c 27	N81-29229 *	NASA-CASE-LAR-13257-1	c 25	N84-32447 *
NASA-CASE-LAR-11902-1	c 27	N78-17206 *	NASA-CASE-LAR-12644-1	c 37	N84-28084 *	NASA-CASE-LAR-13262-1	c 23	N85-28973 *
NASA-CASE-LAR-11903-2	c 71	N84-14873 *	NASA-CASE-LAR-12650-1	c 52	N84-28388 *	NASA-CASE-LAR-13268-1	c 35	N87-14669 *
NASA-CASE-LAR-11919-1	c 07	N78-27121 *	NASA-CASE-LAR-12650-2	c 52	N84-28389 *	NASA-CASE-LAR-13273-2	c 33	N90-20320 *
NASA-CASE-LAR-11922-1	c 25	N79-24073 *	NASA-CASE-LAR-12654-1	c 33	N83-36357 *	NASA-CASE-LAR-13280-1	c 08	N87-20999 *
NASA-CASE-LAR-11932-1	c 05	N78-32086 *	NASA-CASE-LAR-12659-1	c 33	N82-26570 *	NASA-CASE-LAR-13286-1	c 02	N88-14071 *
NASA-CASE-LAR-11970-2	c 08	N81-19130 *	NASA-CASE-LAR-12686-1	c 35	N84-14491 *	NASA-CASE-LAR-13292-1	c 27	N86-24841 *
NASA-CASE-LAR-11973-1	c 35	N78-27384 *	NASA-CASE-LAR-12705-1	c 25	N82-26396 *	NASA-CASE-LAR-13294-1	c 35	N86-32696 *
NASA-CASE-LAR-11995-1	c 28	N77-10213 *	NASA-CASE-LAR-12706-1	c 35	N84-12444 *	NASA-CASE-LAR-13300-1	c 35	N89-14407 *
NASA-CASE-LAR-11999-1	c 44	N80-18552 *	NASA-CASE-LAR-12709-1	c 35	N82-28604 *	NASA-CASE-LAR-13306-1	c 82	N87-28372 *
NASA-CASE-LAR-12007-3	c 35	N84-16523 *	NASA-CASE-LAR-12719-1	c 44	N83-34449 *	NASA-CASE-LAR-13310-1	c 32	N87-14559 *
NASA-CASE-LAR-12009-1	c 44	N78-15560 *	NASA-CASE-LAR-12720-1	c 44	N83-21504 *	NASA-CASE-LAR-13316-2	c 27	N86-27450 *
NASA-CASE-LAR-12016-1	c 39	N78-15512 *	NASA-CASE-LAR-12723-1	c 27	N85-20123 *		c 27	N87-14515 *



NASA-CASE-LAR-13318-1	c 27	N87-14516 *	NASA-CASE-LAR-13963-1	c 76	N90-24150 *	NASA-CASE-LEW-11118-1	c 20	N74-32919 *
NASA-CASE-LAR-13351-1	c 27	N86-31727 *	NASA-CASE-LAR-13965-1-CU	c 23	N90-21118 *	NASA-CASE-LEW-11118-2	c 20	N76-14191 *
NASA-CASE-LAR-13353-1	c 27	N86-29039 *	NASA-CASE-LAR-13966-1	c 71	N90-17408 *	NASA-CASE-LEW-11152-1	c 15	N73-32359 *
NASA-CASE-LAR-13384-1	c 27	N86-20561 *	NASA-CASE-LAR-13968-1	c 71	N90-15710 *	NASA-CASE-LEW-11158-1	c 37	N77-28486 *
NASA-CASE-LAR-13387-1	c 74	N88-25302 *	NASA-CASE-LAR-13881-1	c 37	N90-15442 *	NASA-CASE-LEW-11159-1	c 14	N73-28488 *
NASA-CASE-LAR-13392-1-CU	c 19	N90-10132 *	NASA-CASE-LAR-13883-1	c 05	N90-23390 *	NASA-CASE-LEW-11162-1	c 33	N74-12913 *
NASA-CASE-LAR-13393-1	c 54	N87-29118 *	NASA-CASE-LAR-13885-1	c 24	N89-28586 *	NASA-CASE-LEW-11168-1	c 37	N78-23570 *
NASA-CASE-LAR-13407-1	c 33	N87-28831 *	NASA-CASE-LAR-13888-1	c 23	N89-11814 *	NASA-CASE-LEW-11179-1	c 27	N76-16229 *
NASA-CASE-LAR-13411-1-SB	c 18	N88-23828 *	NASA-CASE-LAR-13992-1-CU	c 23	N89-13496 *	NASA-CASE-LEW-11180-1	c 25	N73-25760 *
NASA-CASE-LAR-13434-1	c 37	N90-23742 *	NASA-CASE-LAR-13996-1-SB	c 25	N90-15161 *	NASA-CASE-LEW-11187-1	c 28	N73-19793 *
NASA-CASE-LAR-13435-1	c 37	N88-23981 *	NASA-CASE-LAR-14001-1	c 27	N90-15260 *	NASA-CASE-LEW-11188-1	c 02	N74-20646 *
NASA-CASE-LAR-13436-1-CU	c 02	N88-23759 *	NASA-CASE-LAR-14009-1	c 37	N90-27115 *	NASA-CASE-LEW-11192-1	c 09	N73-13208 *
NASA-CASE-LAR-13438-1	c 31	N89-12786 *	NASA-CASE-LAR-14031-1	c 05	N90-20079 *	NASA-CASE-LEW-11227-1	c 73	N75-30876 *
NASA-CASE-LAR-13440-1	c 71	N87-21653 *	NASA-CASE-LAR-14033-1	c 34	N90-27072 *	NASA-CASE-LEW-11262-1	c 27	N74-13270 *
NASA-CASE-LAR-13444-1-CU	c 27	N87-22847 *	NASA-CASE-LAR-14049-1	c 07	N89-23466 *	NASA-CASE-LEW-11267-1	c 17	N73-32414 *
NASA-CASE-LAR-13444-2-CU	c 23	N89-12667 *	NASA-CASE-LAR-14050-1	c 31	N90-21216 *	NASA-CASE-LEW-11274-1	c 37	N75-21631 *
NASA-CASE-LAR-13447-1	c 27	N88-18725 *	NASA-CASE-LAR-14056-1	c 35	N90-23713 *	NASA-CASE-LEW-11286-1	c 07	N74-27490 *
NASA-CASE-LAR-13448-1	c 27	N90-21198 *	NASA-CASE-LAR-14062-1	c 37	N90-27114 *	NASA-CASE-LEW-11325-1	c 06	N73-27980 *
NASA-CASE-LAR-13450-1	c 27	N87-28657 *	NASA-CASE-LAR-14078-1-CU	c 34	N90-27071 *	NASA-CASE-LEW-11326-1	c 23	N73-30658 *
NASA-CASE-LAR-13452-1	c 27	N87-22848 *	NASA-CASE-LAR-14101-1	c 27	N89-23692 *	NASA-CASE-LEW-11358	c 03	N71-26084 *
NASA-CASE-LAR-13453-1	c 37	N88-14361 *	NASA-CASE-LAR-14142-1	c 37	N90-27116 *	NASA-CASE-LEW-11359-2	c 03	N72-20034 *
NASA-CASE-LAR-13455-1	c 32	N87-21206 *	NASA-CASE-LAR-14145-1	c 27	N90-26954 *	NASA-CASE-LEW-11359	c 03	N71-28579 *
NASA-CASE-LAR-13458-1	c 35	N88-23967 *	NASA-CASE-LAR-14149-1-SB	c 14	N89-28547 *	NASA-CASE-LEW-11387-1	c 37	N74-18128 *
NASA-CASE-LAR-13465-1	c 27	N90-23544 *	NASA-CASE-LAR-14155-1-SB	c 25	N90-23517 *	NASA-CASE-LEW-11388-1	c 15	N73-32358 *
NASA-CASE-LAR-13470-1	c 03	N88-14083 *	NASA-CASE-LAR-14156-1	c 16	N90-16781 *	NASA-CASE-LEW-11388-2	c 37	N74-21055 *
NASA-CASE-LAR-13474-1-SB	c 26	N87-25455 *	NASA-CASE-LAR-14159-1-CU	c 27	N90-26953 *	NASA-CASE-LEW-11390-2	c 25	N78-27383 *
NASA-CASE-LAR-13476-1-CU	c 76	N87-29360 *	NASA-CASE-LAR-14162-1	c 27	N90-15259 *	NASA-CASE-LEW-11390-3	c 25	N76-29378 *
NASA-CASE-LAR-13486-1	c 16	N90-22584 *	NASA-CASE-LAR-14188-1	c 27	N90-23545 *	NASA-CASE-LEW-11402-1	c 07	N74-28226 *
NASA-CASE-LAR-13489-1	c 18	N87-27713 *	NASA-CASE-LAR-14194-1	c 24	N90-15148 *	NASA-CASE-LEW-11484-1	c 24	N75-33181 *
NASA-CASE-LAR-13490-1	c 18	N87-14413 *	NASA-CASE-LAR-14198-1	c 27	N89-26956 *	NASA-CASE-LEW-11496-1	c 44	N77-14580 *
NASA-CASE-LAR-13506-1	c 27	N89-12741 *	NASA-CASE-LAR-14203-1	c 36	N89-28817 *	NASA-CASE-LEW-11531	c 15	N71-14932 *
NASA-CASE-LAR-13508-1	c 35	N88-23962 *	NASA-CASE-LAR-14250-1-SB	c 72	N90-27472 *	NASA-CASE-LEW-11549-1	c 44	N77-19571 *
NASA-CASE-LAR-13511-1	c 05	N88-23765 *	NASA-CASE-LAR-14338-1	c 24	N90-26881 *	NASA-CASE-LEW-11569-1	c 07	N74-15453 *
NASA-CASE-LAR-13512-1	c 35	N87-28884 *	NASA-CASE-LAR-14339-1	c 27	N90-26955 *	NASA-CASE-LEW-11573-1	c 26	N77-28265 *
NASA-CASE-LAR-13519-1	c 35	N88-23963 *				NASA-CASE-LEW-11581-1	c 54	N75-13531 *
NASA-CASE-LAR-13522-1-SB	c 09	N87-25334 *	NASA-CASE-LEW-10106-1	c 28	N71-26642 *	NASA-CASE-LEW-11583-1	c 35	N79-17192 *
NASA-CASE-LAR-13528-1	c 25	N88-29002 *	NASA-CASE-LEW-10155-1	c 09	N71-29035 *	NASA-CASE-LEW-11593-1	c 20	N76-14190 *
NASA-CASE-LAR-13532-1	c 34	N86-26575 *	NASA-CASE-LEW-10189-1	c 27	N73-2125 *	NASA-CASE-LEW-11617-1	c 33	N74-10195 *
NASA-CASE-LAR-13542-2-SB	c 25	N90-20154 *	NASA-CASE-LEW-10210-1	c 28	N71-26781 *	NASA-CASE-LEW-11632-2	c 35	N75-13213 *
NASA-CASE-LAR-13552-1-CU	c 33	N89-14385 *	NASA-CASE-LEW-10219-1	c 18	N71-28729 *	NASA-CASE-LEW-11646-1	c 20	N74-31269 *
NASA-CASE-LAR-13554-1	c 02	N89-12551 *	NASA-CASE-LEW-10233	c 10	N71-27126 *	NASA-CASE-LEW-11669-1	c 05	N73-27062 *
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NASA-CASE-LAR-13562-1	c 24	N90-25196 *	NASA-CASE-LEW-10281-1	c 14	N72-17327 *	NASA-CASE-LEW-11694-1	c 20	N75-18310 *
NASA-CASE-LAR-13564-1	c 35	N87-25558 *	NASA-CASE-LEW-10286-1	c 28	N71-28915 *	NASA-CASE-LEW-11694-2	c 37	N76-14461 *
NASA-CASE-LAR-13569-1	c 35	N89-12841 *	NASA-CASE-LEW-10326-3	c 37	N74-10474 *	NASA-CASE-LEW-11696-1	c 37	N75-13261 *
NASA-CASE-LAR-13580-1	c 37	N90-16272 *	NASA-CASE-LEW-10327	c 17	N71-33408 *	NASA-CASE-LEW-11696-2	c 26	N75-19408 *
NASA-CASE-LAR-13597-1-CU	c 25	N87-23713 *	NASA-CASE-LEW-10330-1	c 09	N72-27226 *	NASA-CASE-LEW-11726-1	c 26	N73-26752 *
NASA-CASE-LAR-13601-1-CU	c 27	N89-14337 *	NASA-CASE-LEW-10345-1	c 10	N71-25899 *	NASA-CASE-LEW-11855-1	c 07	N78-25090 *
NASA-CASE-LAR-13607-1-CU	c 29	N88-29048 *	NASA-CASE-LEW-10359-2	c 33	N73-25952 *	NASA-CASE-LEW-11860-1	c 37	N76-18458 *
NASA-CASE-LAR-13628-1	c 35	N90-23707 *	NASA-CASE-LEW-10359	c 33	N72-25911 *	NASA-CASE-LEW-11866-1	c 72	N76-15860 *
NASA-CASE-LAR-13630-1	c 08	N88-23809 *	NASA-CASE-LEW-10364-1	c 09	N71-13522 *	NASA-CASE-LEW-11873-1	c 37	N79-22475 *
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NASA-CASE-LAR-13662-1	c 37	N88-14359 *	NASA-CASE-LEW-10424-2-2	c 18	N72-25539 *	NASA-CASE-LEW-11890-1	c 05	N79-24976 *
NASA-CASE-LAR-13678-1	c 76	N90-24168 *	NASA-CASE-LEW-10433-1	c 09	N72-22197 *	NASA-CASE-LEW-11915-1	c 35	N76-14431 *
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NASA-CASE-LAR-13689-1-NP	c 35	N87-23941 *	NASA-CASE-LEW-10450-1	c 15	N72-25448 *	NASA-CASE-LEW-11930-1	c 24	N76-22309 *
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NASA-CASE-LAR-13705-1	c 39	N88-25011 *	NASA-CASE-LEW-10518-1	c 24	N72-33681 *	NASA-CASE-LEW-11930-4	c 24	N79-17916 *
NASA-CASE-LAR-13710-1	c 35	N90-17117 *	NASA-CASE-LEW-10518-3	c 25	N78-27226 *	NASA-CASE-LEW-11938-1	c 33	N76-15373 *
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NASA-CASE-LAR-13724-1	c 38	N90-23756 *	NASA-CASE-LEW-10533-2	c 37	N74-11300 *	NASA-CASE-LEW-11978-1	c 33	N77-26385 *
NASA-CASE-LAR-13732-1	c 27	N87-25474 *	NASA-CASE-LEW-10689-1	c 28	N71-26173 *	NASA-CASE-LEW-11981-1	c 31	N78-17237 *
NASA-CASE-LAR-13734-1-CU	c 09	N90-20096 *	NASA-CASE-LEW-10698-1	c 37	N74-21063 *	NASA-CASE-LEW-11981-2	c 34	N79-20336 *
NASA-CASE-LAR-13738-1	c 18	N87-29586 *	NASA-CASE-LEW-10770-1	c 28	N72-22770 *	NASA-CASE-LEW-12013-1	c 33	N79-10339 *
NASA-CASE-LAR-13740-1	c 35	N90-22770 *	NASA-CASE-LEW-10794-1	c 06	N72-17093 *	NASA-CASE-LEW-12039-1	c 44	N78-14825 *
NASA-CASE-LAR-13741-1-SB	c 25	N90-20180 *	NASA-CASE-LEW-10805-1	c 15	N73-13465 *	NASA-CASE-LEW-12048-1	c 20	N77-20162 *
NASA-CASE-LAR-13747-1-CU	c 32	N89-28672 *	NASA-CASE-LEW-10805-2	c 37	N74-13179 *	NASA-CASE-LEW-12050-1	c 35	N77-32454 *
NASA-CASE-LAR-13761-1	c 34	N90-20323 *	NASA-CASE-LEW-10805-3	c 26	N74-10521 *	NASA-CASE-LEW-12051-1	c 52	N75-33640 *
NASA-CASE-LAR-13771-1	c 36	N89-14428 *	NASA-CASE-LEW-10814-1	c 28	N70-35422 *	NASA-CASE-LEW-12053-1	c 27	N78-15276 *
NASA-CASE-LAR-13772-1	c 36	N89-28816 *	NASA-CASE-LEW-10835-1	c 28	N72-22771 *	NASA-CASE-LEW-12053-2	c 27	N79-28307 *
NASA-CASE-LAR-13773-1	c 20	N90-19298 *	NASA-CASE-LEW-10856-1	c 15	N72-22490 *	NASA-CASE-LEW-12078-1	c 35	N75-30503 *
NASA-CASE-LAR-13775-1	c 35	N90-23706 *	NASA-CASE-LEW-10874-1	c 17	N72-22535 *	NASA-CASE-LEW-12081-1	c 28	N78-24365 *
NASA-CASE-LAR-13776-1	c 35	N88-29149 *	NASA-CASE-LEW-10906-1	c 25	N74-30502 *	NASA-CASE-LEW-12081-2	c 28	N80-20402 *
NASA-CASE-LAR-13777-1	c 05	N90-20078 *	NASA-CASE-LEW-10920-1	c 17	N73-24569 *	NASA-CASE-LEW-12081-3	c 28	N81-14103 *
NASA-CASE-LAR-13785-1	c 70	N90-17403 *	NASA-CASE-LEW-10950-1	c 33	N74-27683 *	NASA-CASE-LEW-12082-1	c 20	N77-10148 *
NASA-CASE-LAR-13797-1	c 35	N88-30108 *	NASA-CASE-LEW-10965-1	c 15	N72-25452 *	NASA-CASE-LEW-12083-1	c 37	N78-13436 *
NASA-CASE-LAR-13798-1	c 32	N89-25363 *	NASA-CASE-LEW-10981-1	c 35	N74-21018 *	NASA-CASE-LEW-12094-1	c 76	N76-25049 *
NASA-CASE-LAR-13816-1	c 35	N90-22025 *	NASA-CASE-LEW-11005-1	c 09	N72-21243 *	NASA-CASE-LEW-12095-1	c 26	N78-18182 *
NASA-CASE-LAR-13817-1	c 26	N90-21170 *	NASA-CASE-LEW-11015	c 26	N73-32571 *	NASA-CASE-LEW-12118-1	c 24	N77-27188 *
NASA-CASE-LAR-13821-1	c 27	N90-16950 *	NASA-CASE-LEW-11026-1	c 15	N73-33383 *	NASA-CASE-LEW-12119-1	c 37	N80-28711 *
NASA-CASE-LAR-13826-1	c 35	N88-29150 *	NASA-CASE-LEW-11058-1	c 20	N74-13502 *	NASA-CASE-LEW-12119-2	c 37	N81-26447 *
NASA-CASE-LAR-13853-1	c 35	N89-14423 *	NASA-CASE-LEW-11065-2	c 44	N76-14600 *	NASA-CASE-LEW-12131-1	c 37	N79-18318 *
NASA-CASE-LAR-13854-1-CU	c 04	N88-24621 *	NASA-CASE-LEW-11069-1	c 44	N74-14784 *	NASA-CASE-LEW-12131-2	c 37	N80-26658 *
NASA-CASE-LAR-13870-1	c 05	N90-15094 *	NASA-CASE-LEW-11072-1	c 14	N73-24472 *	NASA-CASE-LEW-12131-3	c 37	N82-19540 *
NASA-CASE-LAR-13875-1	c 05	N89-14233 *	NASA-CASE-LEW-11072-2	c 35	N76-15434 *	NASA-CASE-LEW-12137-1	c 25	N78-10224 *
NASA-CASE-LAR-13889-1	c 39	N88-30160 *	NASA-CASE-LEW-11076-1	c 37	N74-21061 *	NASA-CASE-LEW-12159-1	c 44	N78-19599 *
NASA-CASE-LAR-13898-1	c 37	N88-30130 *	NASA-CASE-LEW-11076-2	c 37	N74-32921 *	NASA-CASE-LEW-12164-1	c 36	N77-32478 *
NASA-CASE-LAR-13901-1-NP	c 52	N90-21519 *	NASA-CASE-LEW-11076-3	c 37	N75-30562 *	NASA-CASE-LEW-12172-2	c 35	N79-14348 *
NASA-CASE-LAR-13902-1	c 27	N90-23546 *	NASA-CASE-LEW-11076-4	c 37	N76-15461 *	NASA-CASE-LEW-12185-1	c 44	N78-25528 *
NASA-CASE-LAR-13924-1-CU	c 26	N89-28621 *	NASA-CASE-LEW-11087-1	c 15	N73-30458 *	NASA-CASE-LEW-12217-1	c 43	N78-14452 *
NASA-CASE-LAR-13925-1	c 27	N89-25334 *	NASA-CASE-LEW-11087-2	c 37	N74-15128 *	NASA-CASE-LEW-12220-1	c 44	N77-14581 *
NASA-CASE-LAR-13926-1	c 37	N90-22042 *	NASA-CASE-LEW-11087-3	c 37	N74-21064 *	NASA-CASE-LEW-12232-1	c 07	N79-10057 *
NASA-CASE-LAR-13952-1-SB	c 34	N90-19534 *	NASA-CASE-LEW-11071-1	c 31	N73-32750 *	NASA-CASE-LEW-12238-2	c 44	N79-14528 *

NASA-CASE-LEW-12245-1	c 26	N77-20201 *	NASA-CASE-LEW-13103-1	c 27	N80-32516 *	NASA-CASE-LEW-14127-1	c 33	N86-20680 *	#
NASA-CASE-LEW-12252-1	c 34	N79-13288 *	NASA-CASE-LEW-13107-1	c 52	N83-21785 *	NASA-CASE-LEW-14130-1	c 31	N86-32587 *	
NASA-CASE-LEW-12253-1	c 74	N83-19596 *	NASA-CASE-LEW-13107-2	c 52	N84-23095 *	NASA-CASE-LEW-14134-2	c 26	N89-14303 *	
NASA-CASE-LEW-12258-1	c 52	N77-28716 *	NASA-CASE-LEW-13120-1	c 27	N82-28440 *	NASA-CASE-LEW-14170-1	c 37	N86-25790 *	
NASA-CASE-LEW-12270-1	c 26	N77-32280 *	NASA-CASE-LEW-13131-1	c 44	N83-10494 *	NASA-CASE-LEW-14177-1	c 44	N86-32875 *	
NASA-CASE-LEW-12274-1	c 37	N80-31790 *	NASA-CASE-LEW-13132-1	c 27	N83-29388 *	NASA-CASE-LEW-14196-2	c 37	N87-25585 *	#
NASA-CASE-LEW-12296-1	c 33	N82-26568 *	NASA-CASE-LEW-13135-2	c 27	N81-24257 *	NASA-CASE-LEW-14203-1	c 27	N88-29984 *	#
NASA-CASE-LEW-12312-1	c 07	N77-32148 *	NASA-CASE-LEW-13142-1	c 07	N83-36029 *	NASA-CASE-LEW-14212-1	c 37	N88-23978 *	
NASA-CASE-LEW-12313-1	c 37	N78-10468 *	NASA-CASE-LEW-13142-2	c 07	N86-20389 *	NASA-CASE-LEW-14262-1	c 26	N87-28847 *	
NASA-CASE-LEW-12317-1	c 07	N78-17055 *	NASA-CASE-LEW-13148-1	c 33	N80-20487 *	NASA-CASE-LEW-14295-1	c 31	N89-14348 *	#
NASA-CASE-LEW-12321-1	c 37	N78-10467 *	NASA-CASE-LEW-13148-2	c 44	N81-29524 *	NASA-CASE-LEW-14297-1	c 35	N89-12048 *	
NASA-CASE-LEW-12358-1	c 44	N79-17313 *	NASA-CASE-LEW-13150-1	c 44	N79-26474 *	NASA-CASE-LEW-14345-1	c 23	N88-26404 *	
NASA-CASE-LEW-12358-2	c 25	N82-21268 *	NASA-CASE-LEW-13169-1	c 26	N82-29415 *	NASA-CASE-LEW-14345-2	c 25	N90-23497 *	
NASA-CASE-LEW-12364-1	c 44	N77-22606 *	NASA-CASE-LEW-13169-2	c 26	N82-30371 *	NASA-CASE-LEW-14346-1	c 23	N90-19300 *	
NASA-CASE-LEW-12378-1	c 07	N79-14097 *	NASA-CASE-LEW-13171-1	c 44	N82-29708 *	NASA-CASE-LEW-14374-1	c 09	N88-28939 *	
NASA-CASE-LEW-12389-2	c 07	N78-18068 *	NASA-CASE-LEW-13171-2	c 44	N83-32176 *	NASA-CASE-LEW-14392-1	c 27	N87-28656 *	
NASA-CASE-LEW-12389-3	c 07	N79-14096 *	NASA-CASE-LEW-13174-1	c 34	N83-27144 *	NASA-CASE-LEW-14392-2	c 27	N88-29538 *	
NASA-CASE-LEW-12390-1	c 07	N78-17056 *	NASA-CASE-LEW-13199-1	c 07	N82-26293 *	NASA-CASE-LEW-14472-1	c 24	N89-14259 *	#
NASA-CASE-LEW-12419-1	c 07	N77-14025 *	NASA-CASE-LEW-13201-1	c 07	N81-14999 *	NASA-CASE-LEW-14520-1	c 33	N90-22724 *	
NASA-CASE-LEW-12441-1	c 34	N79-13289 *	NASA-CASE-LEW-13226-1	c 27	N81-17260 *	NASA-CASE-LEW-14586-1	c 07	N83-31603 *	
NASA-CASE-LEW-12441-2	c 34	N80-24573 *	NASA-CASE-LEW-13246-1	c 44	N83-27344 *	NASA-CASE-LEW-14672-1	c 37	N90-15444 *	#
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NASA-CASE-LEW-12443-1	c 44	N83-32175 *	NASA-CASE-LEW-13268-2	c 37	N82-26674 *	NASA-CASE-LEW-14679-1	c 37	N88-28651 *	#
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NASA-CASE-LEW-12445-1	c 37	N81-22360 *	NASA-CASE-LEW-13282-1	c 37	N84-22957 *	NASA-CASE-LEW-14698-1	c 24	N88-28888 *	#
NASA-CASE-LEW-12452-1	c 07	N78-25089 *	NASA-CASE-LEW-13282-2	c 33	N82-24415 *	NASA-CASE-LEW-14698-2	c 27	N90-15262 *	#
NASA-CASE-LEW-12456-1	c 25	N78-25148 *	NASA-CASE-LEW-13286-1	c 33	N84-14422 *	NASA-CASE-LEW-14719-1	c 24	N90-23493 *	
NASA-CASE-LEW-12477-1	c 37	N77-32501 *	NASA-CASE-LEW-13324-2	c 24	N85-21266 *	NASA-CASE-LEW-14734-1	c 24	N89-23623 *	#
NASA-CASE-LEW-12493-1	c 24	N81-17170 *	NASA-CASE-LEW-13399-1	c 26	N82-31505 *	NASA-CASE-LEW-14746-1	c 33	N90-17009 *	#
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NASA-CASE-LEW-12541-1	c 44	N78-25529 *	NASA-CASE-LEW-13401-2	c 44	N83-32177 *	NASA-CASE-LEW-14901-1	c 75	N90-10718 *	#
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NASA-CASE-LEW-12550-1	c 24	N77-19170 *	NASA-CASE-LEW-13429-1	c 33	N83-31952 *				
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NASA-CASE-LEW-12552-2	c 44	N79-11472 *	NASA-CASE-LEW-13495-1	c 33	N84-33663 *	NASA-CASE-MFS-07369	c 15	N71-20443 *	
NASA-CASE-LEW-12554-1	c 34	N78-18355 *	NASA-CASE-LEW-13504-1	c 25	N83-31188 *	NASA-CASE-MFS-10068	c 10	N71-25139 *	
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NASA-CASE-LEW-12590-1	c 37	N84-22958 *	NASA-CASE-LEW-13562-2	c 07	N85-35195 *	NASA-CASE-MFS-10509	c 06	N73-30103 *	
NASA-CASE-LEW-12594-2	c 07	N81-19116 *	NASA-CASE-LEW-13570-1	c 33	N84-16452 *	NASA-CASE-MFS-10512	c 06	N73-30099 *	
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NASA-CASE-LEW-12619-1	c 24	N77-19171 *	NASA-CASE-LEW-13609-1	c 25	N90-11824 *	NASA-CASE-MFS-10946-1	c 31	N79-21226 *	
NASA-CASE-LEW-12649-1	c 44	N78-25530 *	NASA-CASE-LEW-13620-1	c 44	N83-13579 *	NASA-CASE-MFS-11132	c 15	N71-17649 *	
NASA-CASE-LEW-12658-1	c 71	N79-14871 *	NASA-CASE-LEW-13622-1	c 07	N84-22559 *	NASA-CASE-MFS-11133	c 31	N71-16222 *	
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NASA-CASE-LEW-12718-1	c 34	N78-25351 *	NASA-CASE-LEW-13653-1	c 44	N84-28205 *	NASA-CASE-MFS-11492	c 06	N73-30102 *	
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NASA-CASE-LEW-12775-1	c 44	N79-11468 *	NASA-CASE-LEW-13717-1	c 37	N85-30333 *	NASA-CASE-MFS-12750	c 27	N71-16223 *	
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NASA-CASE-LEW-12806-2	c 44	N81-12542 *	NASA-CASE-LEW-13770-3	c 27	N85-21350 *	NASA-CASE-MFS-13046	c 07	N71-19433 *	
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NASA-CASE-LEW-12907-2	c 07	N81-19115 *	NASA-CASE-LEW-13833-1	c 33	N85-21492 *	NASA-CASE-MFS-13994-2	c 06	N72-25148 *	
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NASA-CASE-LEW-12917-1	c 07	N78-18067 *	NASA-CASE-LEW-13837-1	c 24	N84-22695 *	NASA-CASE-MFS-14023	c 33	N71-25351 *	
NASA-CASE-LEW-12918-1	c 44	N81-24521 *	NASA-CASE-LEW-13837-2	c 24	N85-21267 *	NASA-CASE-MFS-14114-2	c 09	N71-24807 *	
NASA-CASE-LEW-12919-1	c 24	N83-10117 *	NASA-CASE-LEW-13864-1	c 27	N86-19457 *	NASA-CASE-MFS-14114	c 33	N71-27862 *	
NASA-CASE-LEW-12919-2	c 70	N84-28565 *	NASA-CASE-LEW-13881-1	c 20	N85-21256 *	NASA-CASE-MFS-14216	c 14	N73-13418 *	
NASA-CASE-LEW-12933-1	c 27	N81-19296 *	NASA-CASE-LEW-13889-1	c 31	N87-21160 *	NASA-CASE-MFS-14253	c 33	N71-24858 *	
NASA-CASE-LEW-12938-1	c 07	N82-32366 *	NASA-CASE-LEW-13914-1	c 37	N85-33489 *	NASA-CASE-MFS-14259	c 15	N71-19213 *	
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NASA-CASE-LEW-12950-1	c 34	N82-11399 *	NASA-CASE-LEW-13934-1	c 35	N83-35338 *	NASA-CASE-MFS-14610	c 09	N71-28886 *	
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NASA-CASE-XLE-00266	c 14	N70-34156 *	NASA-CASE-XLE-03804	c 10	N71-19471 *	NASA-CASE-XMF-01083	c 15	N71-22723 *
NASA-CASE-XLE-00267	c 28	N70-33356 *	NASA-CASE-XLE-03925	c 18	N71-22894 *	NASA-CASE-XMF-01096	c 10	N71-16030 *
NASA-CASE-XLE-00283	c 17	N70-36616 *	NASA-CASE-XLE-03940-2	c 17	N72-28536 *	NASA-CASE-XMF-01097	c 10	N71-16058 *
NASA-CASE-XLE-00288	c 15	N70-34247 *	NASA-CASE-XLE-03940	c 18	N71-26153 *	NASA-CASE-XMF-01099	c 14	N71-15969 *
NASA-CASE-XLE-00303	c 15	N70-36535 *	NASA-CASE-XLE-04026	c 14	N71-23267 *	NASA-CASE-XMF-01129	c 09	N70-38712 *
NASA-CASE-XLE-00323	c 28	N70-38505 *	NASA-CASE-XLE-04222	c 23	N71-22881 *	NASA-CASE-XMF-01160	c 07	N71-11298 *
NASA-CASE-XLE-00335	c 14	N70-35368 *	NASA-CASE-XLE-04250	c 09	N71-20446 *	NASA-CASE-XMF-01174	c 02	N70-41589 *
NASA-CASE-XLE-00342	c 28	N70-37980 *	NASA-CASE-XLE-04501	c 09	N71-23190 *	NASA-CASE-XMF-01371	c 15	N70-41629 *
NASA-CASE-XLE-00345	c 15	N70-38020 *	NASA-CASE-XLE-04503	c 14	N71-24864 *	NASA-CASE-XMF-01402	c 18	N71-21651 *
NASA-CASE-XLE-00353	c 18	N70-39897 *	NASA-CASE-XLE-04526	c 03	N71-11052 *	NASA-CASE-XMF-01452	c 15	N70-41371 *
NASA-CASE-XLE-00376	c 28	N70-37245 *	NASA-CASE-XLE-04535	c 03	N71-23354 *	NASA-CASE-XMF-01483	c 14	N69-27431 *
NASA-CASE-XLE-00387	c 33	N70-34812 *	NASA-CASE-XLE-04599	c 22	N72-20597 *	NASA-CASE-XMF-01543	c 31	N71-17730 *
NASA-CASE-XLE-00388	c 28	N70-34788 *	NASA-CASE-XLE-04603	c 33	N71-21507 *	NASA-CASE-XMF-01544	c 28	N70-34162 *
NASA-CASE-XLE-00397	c 15	N70-36492 *	NASA-CASE-XLE-04677	c 15	N71-10577 *	NASA-CASE-XMF-01598	c 21	N71-15583 *
NASA-CASE-XLE-00409	c 28	N71-15658 *	NASA-CASE-XLE-04787	c 03	N71-20492 *	NASA-CASE-XMF-01599	c 09	N71-20705 *
NASA-CASE-XLE-00454	c 23	N71-17802 *	NASA-CASE-XLE-04788	c 09	N71-22987 *	NASA-CASE-XMF-01667	c 15	N71-17647 *
NASA-CASE-XLE-00455	c 28	N70-38197 *	NASA-CASE-XLE-04791	c 32	N74-22096 *	NASA-CASE-XMF-01669	c 21	N71-23289 *
NASA-CASE-XLE-00490	c 33	N70-34545 *	NASA-CASE-XLE-04857	c 28	N71-23968 *	NASA-CASE-XMF-01730	c 15	N71-23050 *
NASA-CASE-XLE-00503	c 14	N70-34818 *	NASA-CASE-XLE-04946	c 17	N71-24911 *	NASA-CASE-XMF-01772	c 11	N70-41677 *
NASA-CASE-XLE-00519	c 28	N70-41576 *	NASA-CASE-XLE-05003	c 15	N71-23810 *	NASA-CASE-XMF-01779	c 12	N71-20815 *
NASA-CASE-XLE-00586	c 15	N71-15968 *	NASA-CASE-XLE-05079	c 15	N71-17652 *	NASA-CASE-XMF-01813	c 28	N70-41582 *
NASA-CASE-XLE-00620	c 32	N70-41579 *	NASA-CASE-XLE-05130-2	c 15	N71-19570 *	NASA-CASE-XMF-01887	c 15	N71-10617 *
NASA-CASE-XLE-00660	c 28	N70-39925 *	NASA-CASE-XLE-05130	c 15	N69-21362 *	NASA-CASE-XMF-01892	c 10	N71-22986 *
NASA-CASE-XLE-00685	c 28	N70-41992 *	NASA-CASE-XLE-05230-2	c 14	N73-13417 *	NASA-CASE-XMF-01899	c 31	N70-41948 *
NASA-CASE-XLE-00688	c 14	N70-41330 *	NASA-CASE-XLE-05230	c 14	N72-27410 *	NASA-CASE-XMF-01973	c 31	N70-41588 *
NASA-CASE-XLE-00690	c 25	N69-39884 *	NASA-CASE-XLE-05260	c 14	N71-20429 *	NASA-CASE-XMF-01974	c 14	N71-22752 *
NASA-CASE-XLE-00702	c 14	N70-40203 *	NASA-CASE-XLE-05641-1	c 15	N71-26346 *	NASA-CASE-XMF-02039	c 15	N71-15871 *
NASA-CASE-XLE-00703	c 15	N71-15967 *	NASA-CASE-XLE-05689	c 28	N71-15659 *	NASA-CASE-XMF-02107	c 15	N71-10809 *
NASA-CASE-XLE-00715	c 15	N70-34859 *	NASA-CASE-XLE-05913	c 33	N71-14032 *	NASA-CASE-XMF-02108	c 31	N70-36845 *
NASA-CASE-XLE-00720	c 14	N70-40201 *	NASA-CASE-XLE-06094	c 33	N78-17293 *	NASA-CASE-XMF-02221	c 18	N71-27170 *
NASA-CASE-XLE-00726	c 17	N71-15644 *	NASA-CASE-XLE-06461-2	c 17	N72-28535 *	NASA-CASE-XMF-02263	c 05	N74-10907 *
NASA-CASE-XLE-00785	c 33	N71-16104 *	NASA-CASE-XLE-06481	c 17	N72-22530 *	NASA-CASE-XMF-02303	c 17	N71-23828 *
NASA-CASE-XLE-00787	c 14	N71-21090 *	NASA-CASE-XLE-06773	c 15	N71-23817 *	NASA-CASE-XMF-02307	c 14	N71-10779 *
NASA-CASE-XLE-00808	c 24	N71-10560 *	NASA-CASE-XLE-06774-2	c 06	N72-25150 *	NASA-CASE-XMF-02330	c 15	N71-23798 *
NASA-CASE-XLE-00810	c 15	N70-34861 *	NASA-CASE-XLE-06969	c 17	N71-24142 *	NASA-CASE-XMF-02392	c 32	N71-24285 *
NASA-CASE-XLE-00815	c 15	N70-35407 *	NASA-CASE-XLE-07087	c 06	N69-39889 *	NASA-CASE-XMF-02433	c 14	N71-10616 *
NASA-CASE-XLE-00817	c 28	N70-33265 *	NASA-CASE-XLE-08511-2	c 18	N71-16105 *	NASA-CASE-XMF-02526-1	c 27	N79-21190 *
NASA-CASE-XLE-00820	c 14	N71-16014 *	NASA-CASE-XLE-08511	c 18	N71-23710 *	NASA-CASE-XMF-02527-1	c 27	N79-21190 *
NASA-CASE-XLE-00853	c 15	N71-15966 *	NASA-CASE-XLE-08569-2	c 03	N71-24681 *	NASA-CASE-XMF-02584	c 06	N71-20905 *
NASA-CASE-XLE-01015	c 03	N69-39898 *	NASA-CASE-XLE-08569	c 03	N71-23449 *	NASA-CASE-XMF-02783-1	c 27	N79-21190 *
NASA-CASE-XLE-01092	c 15	N71-22797 *	NASA-CASE-XLE-08917-2	c 15	N71-24836 *	NASA-CASE-XMF-02786	c 17	N71-20743 *
NASA-CASE-XLE-01124	c 28	N71-14043 *	NASA-CASE-XLE-08917	c 15	N71-15597 *	NASA-CASE-XMF-02822	c 14	N70-41994 *
NASA-CASE-XLE-01182	c 27	N71-15635 *	NASA-CASE-XLE-09341	c 12	N71-28741 *	NASA-CASE-XMF-02853	c 31	N70-36654 *
NASA-CASE-XLE-01246	c 14	N71-10797 *	NASA-CASE-XLE-09475-1	c 33	N71-15568 *	NASA-CASE-XMF-02964	c 14	N71-17659 *
NASA-CASE-XLE-01300	c 15	N70-41993 *	NASA-CASE-XLE-09527-2	c 15	N71-26189 *	NASA-CASE-XMF-02966	c 10	N71-24863 *
NASA-CASE-XLE-01399	c 33	N71-15625 *	NASA-CASE-XLE-09527	c 15	N71-17688 *	NASA-CASE-XMF-03074	c 06	N71-24740 *
NASA-CASE-XLE-01449	c 15	N70-41646 *	NASA-CASE-XLE-10326-2	c 15	N72-29488 *	NASA-CASE-XMF-03169	c 31	N71-15675 *



NASA-CASE-XMF-03198	c 30	N70-40353 *	NASA-CASE-XMS-00945	c 09	N71-10798 *	NASA-CASE-XMS-06329-1	c 15	N71-20441 *
NASA-CASE-XMF-03212	c 15	N71-22721 *	NASA-CASE-XMS-01077-1	c 37	N79-33467 *	NASA-CASE-XMS-06497	c 14	N71-26244 *
NASA-CASE-XMF-03248	c 11	N71-10604 *	NASA-CASE-XMS-01108	c 15	N69-24322 *	NASA-CASE-XMS-06740-1	c 07	N71-26579 *
NASA-CASE-XMF-03287	c 15	N71-15607 *	NASA-CASE-XMS-01115	c 05	N70-39922 *	NASA-CASE-XMS-06761	c 05	N69-23192 *
NASA-CASE-XMF-03290	c 15	N71-23256 *	NASA-CASE-XMS-01177	c 05	N71-19440 *	NASA-CASE-XMS-06767-1	c 14	N71-20435 *
NASA-CASE-XMF-03498	c 15	N71-15986 *	NASA-CASE-XMS-01240	c 05	N70-35152 *	NASA-CASE-XMS-06782	c 32	N71-15974 *
NASA-CASE-XMF-03511	c 15	N71-22799 *	NASA-CASE-XMS-01244-1	c 33	N79-33393 *	NASA-CASE-XMS-06876	c 15	N71-21536 *
NASA-CASE-XMF-03793	c 15	N71-24833 *	NASA-CASE-XMS-01295-1	c 37	N79-21345 *	NASA-CASE-XMS-06894	c 09	N69-21467 *
NASA-CASE-XMF-03844-1	c 14	N71-26474 *	NASA-CASE-XMS-01315	c 09	N70-41675 *	NASA-CASE-XMS-07168	c 07	N71-11300 *
NASA-CASE-XMF-03856	c 31	N70-34159 *	NASA-CASE-XMS-01330	c 37	N75-27376 *	NASA-CASE-XMS-07487	c 15	N71-23255 *
NASA-CASE-XMF-03873	c 06	N69-39733 *	NASA-CASE-XMS-01445	c 12	N71-16031 *	NASA-CASE-XMS-07848-1	c 09	N69-21927 *
NASA-CASE-XMF-03934	c 09	N71-22985 *	NASA-CASE-XMS-01492	c 05	N70-41297 *	NASA-CASE-XMS-08589-1	c 09	N71-20569 *
NASA-CASE-XMF-03968	c 14	N71-27186 *	NASA-CASE-XMS-01546	c 14	N70-40233 *	NASA-CASE-XMS-09310	c 15	N71-22706 *
NASA-CASE-XMF-03988	c 15	N71-21403 *	NASA-CASE-XMS-01554	c 10	N71-10578 *	NASA-CASE-XMS-09352	c 09	N71-23316 *
NASA-CASE-XMF-04042	c 15	N71-23023 *	NASA-CASE-XMS-01615	c 05	N70-41329 *	NASA-CASE-XMS-09571	c 05	N71-19439 *
NASA-CASE-XMF-04132	c 15	N69-27502 *	NASA-CASE-XMS-01618	c 14	N71-20741 *	NASA-CASE-XMS-09810	c 07	N71-24625 *
NASA-CASE-XMF-04133	c 06	N71-20717 *	NASA-CASE-XMS-01620	c 23	N71-15673 *	NASA-CASE-XMS-09832-1	c 05	N71-11203 *
NASA-CASE-XMF-04134	c 14	N71-23755 *	NASA-CASE-XMS-01624	c 15	N70-40062 *	NASA-CASE-XMS-09835	c 05	N71-24623 *
NASA-CASE-XMF-04163	c 02	N71-23007 *	NASA-CASE-XMS-01625	c 15	N71-23022 *	NASA-CASE-XMS-09836	c 05	N71-12344 *
NASA-CASE-XMF-04208	c 33	N71-29051 *	NASA-CASE-XMS-01816	c 33	N71-15623 *	NASA-CASE-XMS-09837-1	c 05	N71-24730 *
NASA-CASE-XMF-04237	c 33	N71-16278 *	NASA-CASE-XMS-01905	c 12	N71-21089 *	NASA-CASE-XMS-09852-1	c 05	N71-26333 *
NASA-CASE-XMF-04238	c 09	N69-39734 *	NASA-CASE-XMS-01906	c 31	N70-41373 *	NASA-CASE-XMS-09853	c 54	N78-17680 *
NASA-CASE-XMF-04367	c 09	N71-23545 *	NASA-CASE-XMS-01991	c 09	N71-21449 *	NASA-CASE-XMS-09890	c 33	N72-25913 *
NASA-CASE-XMF-04415	c 14	N71-24693 *	NASA-CASE-XMS-01994-1	c 14	N72-17326 *	NASA-CASE-XMS-09891-1	c 18	N71-15545 *
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NASA-CASE-XMF-05757-1	c 31	N79-21227 *	NASA-CASE-XMS-03371	c 05	N70-42000 *	NASA-CASE-XNP-00431	c 09	N70-38998 *
NASA-CASE-XMF-05835	c 08	N71-12504 *	NASA-CASE-XMS-03454	c 09	N71-20658 *	NASA-CASE-XNP-00432	c 08	N70-35423 *
NASA-CASE-XMF-05843	c 03	N71-11055 *	NASA-CASE-XMS-03537	c 15	N69-21471 *	NASA-CASE-XNP-00438	c 21	N70-35089 *
NASA-CASE-XMF-05844	c 14	N71-17587 *	NASA-CASE-XMS-03542	c 09	N71-28926 *	NASA-CASE-XNP-00449	c 14	N70-35220 *
NASA-CASE-XMF-05868	c 26	N75-27125 *	NASA-CASE-XMS-03613	c 31	N71-16346 *	NASA-CASE-XNP-00450	c 15	N70-38603 *
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NASA-CASE-XMF-05941	c 31	N71-23912 *	NASA-CASE-XMS-03700	c 15	N69-24266 *	NASA-CASE-XNP-00463	c 33	N70-36847 *
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NASA-CASE-XMF-06617	c 09	N71-24843 *	NASA-CASE-XMS-04213-1	c 09	N71-26002 *	NASA-CASE-XNP-00637	c 14	N70-40273 *
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NASA-CASE-XMF-08651	c 06	N71-11236 *	NASA-CASE-XMS-04826	c 28	N71-28849 *	NASA-CASE-XNP-00777	c 10	N71-19469 *
NASA-CASE-XMF-08652	c 06	N71-11243 *	NASA-CASE-XMS-04843	c 03	N69-21469 *	NASA-CASE-XNP-00816	c 28	N71-28928 *
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NASA-CASE-XMF-08674	c 06	N71-28807 *	NASA-CASE-XMS-04928	c 54	N78-17679 *	NASA-CASE-XNP-00911	c 08	N70-41961 *
NASA-CASE-XMF-08804	c 09	N71-24717 *	NASA-CASE-XMS-04935	c 05	N71-11190 *	NASA-CASE-XNP-00920	c 15	N71-15906 *
NASA-CASE-XMF-09422	c 07	N71-19436 *	NASA-CASE-XMS-05303	c 07	N69-27462 *	NASA-CASE-XNP-00952	c 10	N71-23271 *
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US-PATENT-APPL-SN-138230	c 32	N73-20740 *	US-PATENT-APPL-SN-154713	c 72	N89-29169 *	US-PATENT-APPL-SN-173520	c 31	N83-27058 *
US-PATENT-APPL-SN-138944	c 37	N82-26672 *	US-PATENT-APPL-SN-154716	c 74	N88-25302 *	US-PATENT-APPL-SN-173524	c 35	N82-32659 *
US-PATENT-APPL-SN-139006	c 09	N70-38604 *	US-PATENT-APPL-SN-154718	c 74	N88-25301 *	US-PATENT-APPL-SN-173981	c 14	N70-35666 *
US-PATENT-APPL-SN-139007	c 28	N70-37245 *	US-PATENT-APPL-SN-154725	c 37	N82-24493 *	US-PATENT-APPL-SN-174684	c 33	N75-31331 *
US-PATENT-APPL-SN-139012	c 03	N70-38713 *	US-PATENT-APPL-SN-154726	c 25	N81-25159 *	US-PATENT-APPL-SN-175267	c 14	N73-28486 *
US-PATENT-APPL-SN-139094	c 05	N73-32011 *	US-PATENT-APPL-SN-154930	c 44	N76-14600 *	US-PATENT-APPL-SN-175452	c 27	N81-27272 *
US-PATENT-APPL-SN-139250	c 04	N73-27052 *	US-PATENT-APPL-SN-154933	c 14	N73-25463 *	US-PATENT-APPL-SN-175452	c 27	N85-21347 *
US-PATENT-APPL-SN-139528	c 03	N72-25020 *	US-PATENT-APPL-SN-154935	c 11	N72-27262 *	US-PATENT-APPL-SN-175453	c 85	N82-33288 *
US-PATENT-APPL-SN-139596	c 33	N77-13315 *	US-PATENT-APPL-SN-155555	c 08	N73-25206 *	US-PATENT-APPL-SN-175497	c 08	N73-28045 *
US-PATENT-APPL-SN-140439	c 33	N75-19518 *	US-PATENT-APPL-SN-155584	c 09	N70-40123 *	US-PATENT-APPL-SN-175852	c 25	N73-25760 *
US-PATENT-APPL-SN-140443	c 09	N70-35219 *	US-PATENT-APPL-SN-155595	c 26	N73-28710 *	US-PATENT-APPL-SN-175881	c 09	N73-15235 *
US-PATENT-APPL-SN-140509	c 09	N70-35382 *	US-PATENT-APPL-SN-155596	c 15	N73-32361 *	US-PATENT-APPL-SN-175981	c 16	N73-30476 *
US-PATENT-APPL-SN-140946	c 18	N73-26572 *	US-PATENT-APPL-SN-155598	c 15	N73-28516 *	US-PATENT-APPL-SN-175983	c 31	N73-32750 *
US-PATENT-APPL-SN-140948	c 27	N74-27037 *	US-PATENT-APPL-SN-156059	c 37	N90-19602 *	US-PATENT-APPL-SN-176545	c 31	N88-24817 *
US-PATENT-APPL-SN-141220	c 33	N70-37979 *	US-PATENT-APPL-SN-156393	c 35	N88-24941 *	US-PATENT-APPL-SN-176547	c 76	N90-24168 *
US-PATENT-APPL-SN-142583	c 37	N79-33469 *	US-PATENT-APPL-SN-156518	c 74	N89-25689 *	US-PATENT-APPL-SN-176587	c 20	N88-24684 *
US-PATENT-APPL-SN-142662	c 23	N73-13661 *	US-PATENT-APPL-SN-156724	c 21	N73-13643 *	US-PATENT-APPL-SN-177684	c 28	N70-34660 *
US-PATENT-APPL-SN-142719	c 14	N73-14429 *	US-PATENT-APPL-SN-156725	c 14	N73-27377 *	US-PATENT-APPL-SN-177753	c 07	N72-20154 *
US-PATENT-APPL-SN-143078	c 08	N72-33172 *	US-PATENT-APPL-SN-156778	c 17	N72-28535 *	US-PATENT-APPL-SN-177985	c 35	N74-15831 *
US-PATENT-APPL-SN-143434	c 60	N80-21525 *	US-PATENT-APPL-SN-156790	c 25	N82-29371 *	US-PATENT-APPL-SN-178192	c 25	N83-33977 *
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US-PATENT-APPL-SN-143508	c 33	N74-12913 *	US-PATENT-APPL-SN-158530	c 27	N83-19900 *	US-PATENT-APPL-SN-178195	c 35	N82-24470 *
US-PATENT-APPL-SN-144139	c 11	N73-26238 *	US-PATENT-APPL-SN-158914	c 11	N70-36913 *	US-PATENT-APPL-SN-178213	c 25	N70-33267 *
US-PATENT-APPL-SN-144803	c 11	N70-34844 *	US-PATENT-APPL-SN-158916	c 05	N70-41819 *	US-PATENT-APPL-SN-178215	c 25	N70-34661 *
US-PATENT-APPL-SN-144804	c 14	N70-39888 *	US-PATENT-APPL-SN-159071	c 25	N90-23497 *	US-PATENT-APPL-SN-178721	c 03	N70-35408 *
US-PATENT-APPL-SN-14488	c 09	N70-38995 *	US-PATENT-APPL-SN-159072	c 18	N89-25266 *	US-PATENT-APPL-SN-178771	c 23	N75-14834 *
US-PATENT-APPL-SN-144958	c 09	N72-20206 *	US-PATENT-APPL-SN-159613	c 35	N88-24943 *	US-PATENT-APPL-SN-180230	c 33	N83-18996 *
US-PATENT-APPL-SN-145007	c 18	N70-36400 *	US-PATENT-APPL-SN-159613	c 36	N90-17132 *	US-PATENT-APPL-SN-180370	c 28	N70-33375 *
US-PATENT-APPL-SN-145026	c 06	N72-25152 *	US-PATENT-APPL-SN-159804	c 11	N70-38196 *	US-PATENT-APPL-SN-180374	c 28	N70-38181 *
US-PATENT-APPL-SN-145027	c 08	N73-20229 *	US-PATENT-APPL-SN-159857	c 05	N73-26072 *	US-PATENT-APPL-SN-180377	c 15	N70-38908 *
US-PATENT-APPL-SN-145107	c 27	N82-16238 *	US-PATENT-APPL-SN-159966	c 31	N73-26876 *	US-PATENT-APPL-SN-180379	c 21	N70-35395 *
US-PATENT-APPL-SN-145206	c 32	N82-11336 *	US-PATENT-APPL-SN-160093	c 04	N78-17031 *	US-PATENT-APPL-SN-180380	c 09	N70-38998 *
US-PATENT-APPL-SN-145207	c 25	N82-28368 *	US-PATENT-APPL-SN-160859	c 32	N73-26101 *	US-PATENT-APPL-SN-180381	c 21	N70-35089 *
US-PATENT-APPL-SN-145208	c 34	N83-34221 *	US-PATENT-APPL-SN-160860	c 18	N73-32437 *	US-PATENT-APPL-SN-180382	c 28	N70-38645 *
US-PATENT-APPL-SN-145209	c 27	N82-29453 *	US-PATENT-APPL-SN-161028	c 14	N73-19420 *	US-PATENT-APPL-SN-180384	c 11	N70-38675 *
US-PATENT-APPL-SN-145210	c 09	N82-23254 *	US-PATENT-APPL-SN-161254	c 27	N82-28441 *	US-PATENT-APPL-SN-180391	c 28	N70-38249 *
US-PATENT-APPL-SN-145271	c 23	N81-29160 *	US-PATENT-APPL-SN-161255	c 28	N81-24280 *	US-PATENT-APPL-SN-180392	c 09	N71-13530 *
US-PATENT-APPL-SN-145272	c 33	N82-28545 *	US-PATENT-APPL-SN-161256	c 44	N82-32841 *	US-PATENT-APPL-SN-180394	c 15	N70-38603 *
US-PATENT-APPL-SN-145273	c 51	N81-32829 *	US-PATENT-APPL-SN-161257	c 37	N85-29282 *	US-PATENT-APPL-SN-180395	c 15	N70-36947 *
US-PATENT-APPL-SN-145282	c 74	N82-24072 *	US-PATENT-APPL-SN-161681	c 76	N90-24169 *	US-PATENT-APPL-SN-180396	c 11	N70-38202 *
US-PATENT-APPL-SN-145283	c 27	N81-24256 *	US-PATENT-APPL-SN-162100	c 33	N74-14439 *	US-PATENT-APPL-SN-180473	c 28	N73-27699 *
US-PATENT-APPL-SN-145284	c 27	N82-24338 *	US-PATENT-APPL-SN-162101	c 14	N73-24473 *	US-PATENT-APPL-SN-180683	c 10	N73-25241 *
US-PATENT-APPL-SN-145719	c 25	N90-20154 *	US-PATENT-APPL-SN-162230	c 26	N72-28761 *	US-PATENT-APPL-SN-180693	c 14	N73-27378 *
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US-PATENT-APPL-SN-146935	c 14	N73-20475 *	US-PATENT-APPL-SN-163122	c 07	N83-31603 *	US-PATENT-APPL-SN-181024	c 07	N73-26117 *
US-PATENT-APPL-SN-146938	c 35	N88-23963 *	US-PATENT-APPL-SN-163151	c 74	N75-25706 *	US-PATENT-APPL-SN-181828	c 02	N70-34858 *
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US-PATENT-APPL-SN-146939	c 35	N88-23962 *	US-PATENT-APPL-SN-163837	c 47	N83-32232 *	US-PATENT-APPL-SN-182000	c 18	N88-24660 *
US-PATENT-APPL-SN-146940	c 05	N73-32014 *	US-PATENT-APPL-SN-163838	c 23	N82-28353 *	US-PATENT-APPL-SN-182033	c 33	N73-27796 *
US-PATENT-APPL-SN-147099	c 14	N73-13417 *	US-PATENT-APPL-SN-163840	c 37	N81-33482 *	US-PATENT-APPL-SN-182266	c 17	N88-24662 *
US-PATENT-APPL-SN-147103	c 10	N73-20253 *	US-PATENT-APPL-SN-163928	c 27	N90-16949 *	US-PATENT-APPL-SN-182399	c 07	N73-28013 *
US-PATENT-APPL-SN-147695	c 32	N84-27952 *	US-PATENT-APPL-SN-164584	c 24	N83-33950 *	US-PATENT-APPL-SN-182692	c 15	N70-36535 *
US-PATENT-APPL-SN-147700	c 27	N82-24339 *	US-PATENT-APPL-SN-164428	c 09	N70-35440 *	US-PATENT-APPL-SN-182696	c 21	N70-36938 *
US-PATENT-APPL-SN-147822	c 28	N73-19793 *	US-PATENT-APPL-SN-164617	c 06	N81-17057 *	US-PATENT-APPL-SN-182698	c 15	N70-38620 *
US-PATENT-APPL-SN-147940	c 14	N72-10375 *	US-PATENT-APPL-SN-165910	c 32	N83-31918 *	US-PATENT-APPL-SN-182699	c 28	N70-38504 *
US-PATENT-APPL-SN-147996	c 28	N73-24784 *	US-PATENT-APPL-SN-165943	c 37	N89-28831 *	US-PATENT-APPL-SN-182779	c 37	N82-32730 *
US-PATENT-APPL-SN-147997	c 15	N72-33477 *	US-PATENT-APPL-SN-165945	c 35	N90-22025 *	US-PATENT-APPL-SN-182880	c 37	N83-19091 *
US-PATENT-APPL-SN-148001	c 14	N70-34298 *	US-PATENT-APPL-SN-165946	c 20	N90-19298 *	US-PATENT-APPL-SN-182881	c 18	N83-28064 *
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US-PATENT-APPL-SN-149283	c 35	N74-17153 *	US-PATENT-APPL-SN-166487	c 11	N73-32152 *	US-PATENT-APPL-SN-182978	c 16	N73-13489 *
US-PATENT-APPL-SN-149526	c 52	N82-33996 *	US-PATENT-APPL-SN-166541	c 14	N73-13415 *	US-PATENT-APPL-SN-183240	c 06	N73-30098 *
US-PATENT-APPL-SN-149821	c 31	N88-23917 *	US-PATENT-APPL-SN-166969	c 15	N70-34249 *	US-PATENT-APPL-SN-183707	c 23	N85-33187 *
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US-PATENT-APPL-SN-184234	c 76	N90-19884 *	US-PATENT-APPL-SN-199769	c 26	N82-31505 *	US-PATENT-APPL-SN-217336	c 27	N82-29456 *
US-PATENT-APPL-SN-184235	c 32	N90-17005 *	US-PATENT-APPL-SN-199957	c 10	N73-26229	US-PATENT-APPL-SN-217533	c 36	N88-29602 *
US-PATENT-APPL-SN-184236	c 37	N90-17153 *	US-PATENT-APPL-SN-200040	c 52	N74-10975	US-PATENT-APPL-SN-217725	c 75	N89-12843 *
US-PATENT-APPL-SN-18427	c 09	N72-23172 *	US-PATENT-APPL-SN-200085	c 26	N73-26751 *	US-PATENT-APPL-SN-218585	c 27	N82-24340 *
US-PATENT-APPL-SN-184649	c 07	N70-36911 *	US-PATENT-APPL-SN-200634	c 34	N83-27144 *	US-PATENT-APPL-SN-218586	c 36	N81-22344 *
US-PATENT-APPL-SN-184960	c 06	N73-27980 *	US-PATENT-APPL-SN-200682	c 07	N73-14130	US-PATENT-APPL-SN-218587	c 27	N82-28440 *
US-PATENT-APPL-SN-185865	c 52	N80-33081 *	US-PATENT-APPL-SN-200717	c 09	N73-19234 *	US-PATENT-APPL-SN-218588	c 27	N82-33521 *
US-PATENT-APPL-SN-185867	c 44	N82-26777 *	US-PATENT-APPL-SN-200762	c 03	N73-20040 *	US-PATENT-APPL-SN-218965	c 10	N73-32145 *
US-PATENT-APPL-SN-185868	c 24	N84-16262 *	US-PATENT-APPL-SN-200770	c 09	N79-21084	US-PATENT-APPL-SN-219016	c 24	N88-29888 *
US-PATENT-APPL-SN-185869	c 71	N82-16800 *	US-PATENT-APPL-SN-200874	c 17	N88-28946 *	US-PATENT-APPL-SN-21906	c 09	N72-17157 *
US-PATENT-APPL-SN-186700	c 32	N74-12912 *	US-PATENT-APPL-SN-201700	c 33	N74-17930 *	US-PATENT-APPL-SN-219295	c 61	N90-16410 *
US-PATENT-APPL-SN-186881	c 74	N82-30071 *	US-PATENT-APPL-SN-201782	c 15	N73-19458 *	US-PATENT-APPL-SN-219435	c 24	N74-27035 *
US-PATENT-APPL-SN-187106	c 74	N83-17305 *	US-PATENT-APPL-SN-201904	c 15	N73-30458 *	US-PATENT-APPL-SN-219436	c 15	N72-21489 *
US-PATENT-APPL-SN-187143	c 36	N74-13205 *	US-PATENT-APPL-SN-201904	c 37	N74-15128 *	US-PATENT-APPL-SN-219590	c 06	N73-32030 *
US-PATENT-APPL-SN-187262	c 15	N73-27406 *	US-PATENT-APPL-SN-202024	c 37	N74-21064 *	US-PATENT-APPL-SN-219640	c 74	N83-13978 *
US-PATENT-APPL-SN-187365	c 35	N74-15127 *	US-PATENT-APPL-SN-202029	c 14	N70-34156 *	US-PATENT-APPL-SN-219677	c 44	N82-31764 *
US-PATENT-APPL-SN-187446	c 31	N70-37824 *	US-PATENT-APPL-SN-202030	c 11	N70-34786 *	US-PATENT-APPL-SN-219678	c 44	N82-29709 *
US-PATENT-APPL-SN-187716	c 74	N88-25305 *	US-PATENT-APPL-SN-202228	c 31	N71-10747 *	US-PATENT-APPL-SN-219680	c 27	N82-28442 *
US-PATENT-APPL-SN-18776	c 28	N70-33284 *	US-PATENT-APPL-SN-202228	c 34	N82-11399 *	US-PATENT-APPL-SN-219681	c 24	N82-29362 *
US-PATENT-APPL-SN-18780	c 12	N70-33305 *	US-PATENT-APPL-SN-202228	c 34	N85-29179 *	US-PATENT-APPL-SN-219681	c 54	N84-11758 *
US-PATENT-APPL-SN-188160	c 74	N82-19029 *	US-PATENT-APPL-SN-202750	c 19	N74-21015 *	US-PATENT-APPL-SN-219722	c 03	N75-30132 *
US-PATENT-APPL-SN-188594	c 15	N70-34967 *	US-PATENT-APPL-SN-202769	c 05	N73-27941 *	US-PATENT-APPL-SN-219806	c 07	N74-28226 *
US-PATENT-APPL-SN-188836	c 35	N74-34851 *	US-PATENT-APPL-SN-203177	c 39	N88-25011 *	US-PATENT-APPL-SN-219968	c 33	N83-27122 *
US-PATENT-APPL-SN-188927	c 08	N73-32087 *	US-PATENT-APPL-SN-203178	c 34	N90-19534 *	US-PATENT-APPL-SN-220212	c 33	N83-31952 *
US-PATENT-APPL-SN-188928	c 37	N74-13178 *	US-PATENT-APPL-SN-203271	c 51	N74-15778 *	US-PATENT-APPL-SN-220213	c 37	N85-20337 *
US-PATENT-APPL-SN-189290	c 14	N73-27379 *	US-PATENT-APPL-SN-203376	c 32	N88-30001 *	US-PATENT-APPL-SN-220214	c 44	N82-29710 *
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US-PATENT-APPL-SN-189438	c 35	N76-15431 *	US-PATENT-APPL-SN-203409	c 28	N70-38197 *	US-PATENT-APPL-SN-220274	c 31	N72-20840 *
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US-PATENT-APPL-SN-18982	c 28	N72-11708 *	US-PATENT-APPL-SN-20370	c 33	N79-33393 *	US-PATENT-APPL-SN-220785	c 85	N74-34672 *
US-PATENT-APPL-SN-190185	c 74	N88-25304 *	US-PATENT-APPL-SN-204015	c 09	N70-38201 *	US-PATENT-APPL-SN-221093	c 17	N73-32415 *
US-PATENT-APPL-SN-190316	c 17	N73-32414 *	US-PATENT-APPL-SN-205047	c 15	N73-32360 *	US-PATENT-APPL-SN-221276	c 14	N70-41955 *
US-PATENT-APPL-SN-191301	c 25	N74-12813 *	US-PATENT-APPL-SN-205470	c 08	N71-18752 *	US-PATENT-APPL-SN-221386	c 23	N90-21118 *
US-PATENT-APPL-SN-191744	c 33	N82-29538 *	US-PATENT-APPL-SN-205675	c 14	N73-30386 *	US-PATENT-APPL-SN-221387	c 36	N89-14428 *
US-PATENT-APPL-SN-191746	c 26	N81-16209 *	US-PATENT-APPL-SN-205771	c 31	N89-29578 *	US-PATENT-APPL-SN-221388	c 37	N90-20408 *
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US-PATENT-APPL-SN-192016	c 03	N70-36778 *	US-PATENT-APPL-SN-205900	c 35	N90-22770 *	US-PATENT-APPL-SN-221637	c 26	N70-36805 *
US-PATENT-APPL-SN-192101	c 10	N73-20254 *	US-PATENT-APPL-SN-206266	c 76	N74-20329 *	US-PATENT-APPL-SN-221670	c 35	N77-14408 *
US-PATENT-APPL-SN-192141	c 07	N73-24176 *	US-PATENT-APPL-SN-206266	c 76	N75-25730 *	US-PATENT-APPL-SN-221685	c 35	N74-21062 *
US-PATENT-APPL-SN-192562	c 04	N88-24621 *	US-PATENT-APPL-SN-206279	c 02	N73-26005 *	US-PATENT-APPL-SN-221714	c 09	N73-32110 *
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US-PATENT-APPL-SN-192803	c 35	N76-16391 *	US-PATENT-APPL-SN-206688	c 15	N73-30459 *	US-PATENT-APPL-SN-22265	c 14	N72-21405 *
US-PATENT-APPL-SN-192970	c 23	N73-30665 *	US-PATENT-APPL-SN-207135	c 35	N83-27184 *	US-PATENT-APPL-SN-223003	c 33	N70-36846 *
US-PATENT-APPL-SN-193456	c 10	N73-25243 *	US-PATENT-APPL-SN-207211	c 07	N73-30113 *	US-PATENT-APPL-SN-223124	c 31	N90-19427 *
US-PATENT-APPL-SN-193671	c 15	N73-12488 *	US-PATENT-APPL-SN-209478	c 07	N70-38200 *	US-PATENT-APPL-SN-22320	c 14	N72-11365 *
US-PATENT-APPL-SN-193672	c 54	N74-14845 *	US-PATENT-APPL-SN-209479	c 15	N70-34850 *	US-PATENT-APPL-SN-223560	c 10	N73-32144 *
US-PATENT-APPL-SN-193814	c 14	N73-30393 *	US-PATENT-APPL-SN-209535	c 28	N73-24783 *	US-PATENT-APPL-SN-224231	c 06	N83-10040 *
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US-PATENT-APPL-SN-241155	c 27	N84-14324 *	US-PATENT-APPL-SN-252081	c 05	N90-20079 *	US-PATENT-APPL-SN-269215	c 14	N70-41332 *
US-PATENT-APPL-SN-24154	c 15	N70-35679 *	US-PATENT-APPL-SN-252259	c 33	N70-34545 *	US-PATENT-APPL-SN-269222	c 15	N70-38225 *
US-PATENT-APPL-SN-24154	c 15	N72-17450 *	US-PATENT-APPL-SN-253249	c 33	N74-11050 *	US-PATENT-APPL-SN-269450	c 38	N76-18427 *
US-PATENT-APPL-SN-24155	c 14	N73-26432 *	US-PATENT-APPL-SN-253405	c 10	N73-26228 *	US-PATENT-APPL-SN-270118	c 33	N71-17610 *
US-PATENT-APPL-SN-241614	c 10	N73-27171 *	US-PATENT-APPL-SN-253725	c 35	N74-13129 *	US-PATENT-APPL-SN-270189	c 07	N89-23466 *
US-PATENT-APPL-SN-241615	c 09	N73-32111 *	US-PATENT-APPL-SN-253774	c 25	N70-36946 *	US-PATENT-APPL-SN-270763	c 38	N84-14509 *
US-PATENT-APPL-SN-242027	c 52	N74-12778 *	US-PATENT-APPL-SN-254173	c 35	N75-13213 *	US-PATENT-APPL-SN-271821	c 15	N71-10778 *
US-PATENT-APPL-SN-242028	c 21	N73-30641 *	US-PATENT-APPL-SN-254177	c 10	N73-26230 *	US-PATENT-APPL-SN-271822	c 15	N71-15967 *
US-PATENT-APPL-SN-242224	c 09	N72-20200 *	US-PATENT-APPL-SN-254323	c 35	N76-15434 *	US-PATENT-APPL-SN-271823	c 27	N71-28929 *
US-PATENT-APPL-SN-242253	c 03	N89-11724 *	US-PATENT-APPL-SN-254575	c 25	N83-10126 *	US-PATENT-APPL-SN-271824	c 07	N71-21476 *
US-PATENT-APPL-SN-242662	c 74	N74-15095 *	US-PATENT-APPL-SN-254688	c 52	N83-27577 *	US-PATENT-APPL-SN-271951	c 35	N74-15092 *
US-PATENT-APPL-SN-242790	c 06	N83-33882 *	US-PATENT-APPL-SN-254847	c 15	N71-22874 *	US-PATENT-APPL-SN-272152	c 27	N83-29388 *
US-PATENT-APPL-SN-242795	c 18	N83-20996 *	US-PATENT-APPL-SN-25487	c 08	N72-21197 *	US-PATENT-APPL-SN-272233	c 44	N81-27615 *
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US-PATENT-APPL-SN-242796	c 44	N83-13579 *	US-PATENT-APPL-SN-255132	c 14	N71-15598 *	US-PATENT-APPL-SN-272406	c 33	N84-14422 *
US-PATENT-APPL-SN-242797	c 74	N85-22139 *	US-PATENT-APPL-SN-255317	c 52	N74-26626 *	US-PATENT-APPL-SN-272407	c 52	N83-21785 *
US-PATENT-APPL-SN-243374	c 15	N77-10112 *	US-PATENT-APPL-SN-2556484	c 06	N70-34946 *	US-PATENT-APPL-SN-272837	c 71	N83-36846 *
US-PATENT-APPL-SN-243682	c 74	N83-19596 *	US-PATENT-APPL-SN-2556493	c 20	N77-17143 *	US-PATENT-APPL-SN-273222	c 33	N74-27683 *
US-PATENT-APPL-SN-243683	c 33	N81-22280 *	US-PATENT-APPL-SN-257346	c 15	N70-36901 *	US-PATENT-APPL-SN-273240	c 35	N74-16135 *
US-PATENT-APPL-SN-243683	c 33	N83-28319 *	US-PATENT-APPL-SN-257593	c 36	N90-25340 *	US-PATENT-APPL-SN-27340	c 15	N72-20442 *
US-PATENT-APPL-SN-243683	c 33	N84-14424 *	US-PATENT-APPL-SN-258152	c 35	N74-15090 *	US-PATENT-APPL-SN-273519	c 35	N75-25122 *
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US-PATENT-APPL-SN-243684	c 37	N84-12492 *	US-PATENT-APPL-SN-258331	c 03	N73-31888 *	US-PATENT-APPL-SN-274348	c 60	N76-18800 *
US-PATENT-APPL-SN-244158	c 32	N74-20863 *	US-PATENT-APPL-SN-258623	c 60	N83-32342 *	US-PATENT-APPL-SN-274360	c 32	N74-20809 *
US-PATENT-APPL-SN-244367	c 74	N89-13253 *	US-PATENT-APPL-SN-258931	c 14	N70-40203 *	US-PATENT-APPL-SN-274705	c 44	N83-21503 *
US-PATENT-APPL-SN-244369	c 29	N90-21209 *	US-PATENT-APPL-SN-258932	c 05	N70-36493 *	US-PATENT-APPL-SN-274706	c 44	N83-21504 *
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US-PATENT-APPL-SN-276076	c 72	N84-16959 *	#	US-PATENT-APPL-SN-292141	c 76	N89-30076 *	#	US-PATENT-APPL-SN-310506	c 10	N71-16042 *
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US-PATENT-APPL-SN-276749	c 74	N84-23247 *		US-PATENT-APPL-SN-292382	c 27	N74-17283 *		US-PATENT-APPL-SN-310616	c 35	N74-21017 *
US-PATENT-APPL-SN-277404	c 05	N70-39922 *		US-PATENT-APPL-SN-292477	c 15	N73-12495 *	#	US-PATENT-APPL-SN-310624	c 33	N74-17929 *
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US-PATENT-APPL-SN-277596	c 74	N89-24153 *	#	US-PATENT-APPL-SN-292681	c 33	N74-10194 *		US-PATENT-APPL-SN-311175	c 32	N74-22771 *
US-PATENT-APPL-SN-277833	c 03	N70-41580 *		US-PATENT-APPL-SN-292682	c 14	N73-32319 *		US-PATENT-APPL-SN-311234	c 35	N74-23040 *
US-PATENT-APPL-SN-277904	c 28	N74-27425 *		US-PATENT-APPL-SN-292685	c 32	N74-20864 *		US-PATENT-APPL-SN-311387	c 23	N71-30027 *
US-PATENT-APPL-SN-277961	c 33	N70-36617 *		US-PATENT-APPL-SN-292686	c 20	N74-31269 *		US-PATENT-APPL-SN-312269	c 28	N71-14043 *
US-PATENT-APPL-SN-278137	c 51	N89-25557 *	#	US-PATENT-APPL-SN-292698	c 09	N73-32109 *		US-PATENT-APPL-SN-31242	c 28	N70-33374 *
US-PATENT-APPL-SN-278790	c 15	N70-34664 *		US-PATENT-APPL-SN-293412	c 27	N83-34039 *		US-PATENT-APPL-SN-312443	c 10	N71-21473 *
US-PATENT-APPL-SN-2792	c 14	N70-33386 *		US-PATENT-APPL-SN-293414	c 37	N84-16560 *		US-PATENT-APPL-SN-313132	c 28	N70-34175 *
US-PATENT-APPL-SN-279624	c 24	N89-23623 *	#	US-PATENT-APPL-SN-293417	c 37	N82-26673 *	#	US-PATENT-APPL-SN-313135	c 15	N70-35087 *
US-PATENT-APPL-SN-279625	c 31	N90-23586 *		US-PATENT-APPL-SN-293418	c 26	N83-31795 *		US-PATENT-APPL-SN-313136	c 09	N71-12540 *
US-PATENT-APPL-SN-279630	c 60	N90-25583 *		US-PATENT-APPL-SN-293419	c 33	N82-24422 *	#	US-PATENT-APPL-SN-313381	c 35	N74-15091 *
US-PATENT-APPL-SN-279646	c 08	N71-21042 *		US-PATENT-APPL-SN-293725	c 89	N74-30886 *		US-PATENT-APPL-SN-313839	c 37	N90-21390 *
US-PATENT-APPL-SN-279676	c 33	N89-29679 *	#	US-PATENT-APPL-SN-293726	c 37	N74-21055 *		US-PATENT-APPL-SN-314074	c 15	N71-16079 *
US-PATENT-APPL-SN-279677	c 31	N89-23738 *	#	US-PATENT-APPL-SN-293727	c 33	N74-14956 *		US-PATENT-APPL-SN-314570	c 10	N71-28960 *
US-PATENT-APPL-SN-279677	c 31	N90-26168 *		US-PATENT-APPL-SN-293739	c 35	N74-28097 *		US-PATENT-APPL-SN-314572	c 14	N71-15992 *
US-PATENT-APPL-SN-280029	c 35	N74-15126 *		US-PATENT-APPL-SN-294727	c 73	N77-18891 *		US-PATENT-APPL-SN-314656	c 51	N77-25769 *
US-PATENT-APPL-SN-280031	c 26	N73-26752 *		US-PATENT-APPL-SN-294738	c 73	N78-28913 *		US-PATENT-APPL-SN-314702	c 71	N84-16940 *
US-PATENT-APPL-SN-280032	c 35	N74-15093 *		US-PATENT-APPL-SN-295855	c 23	N71-17802 *		US-PATENT-APPL-SN-314928	c 32	N84-34651 *
US-PATENT-APPL-SN-280151	c 27	N83-36220 *		US-PATENT-APPL-SN-296622	c 74	N84-28590 *		US-PATENT-APPL-SN-314929	c 71	N83-32515 *
US-PATENT-APPL-SN-280152	c 54	N86-22112 *		US-PATENT-APPL-SN-296622	c 44	N76-31666 *		US-PATENT-APPL-SN-315048	c 34	N74-27730 *
US-PATENT-APPL-SN-280153	c 51	N83-17045 *		US-PATENT-APPL-SN-296879	c 26	N71-18064 *		US-PATENT-APPL-SN-315089	c 33	N74-20862 *
US-PATENT-APPL-SN-280154	c 33	N83-10345 *		US-PATENT-APPL-SN-297127	c 33	N74-27705 *		US-PATENT-APPL-SN-315070	c 60	N76-23850 *
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US-PATENT-APPL-SN-280305	c 34	N74-23039 *		US-PATENT-APPL-SN-297436	c 33	N79-11314 *		US-PATENT-APPL-SN-3151	c 05	N72-27102 *
US-PATENT-APPL-SN-280362	c 14	N71-28935 *		US-PATENT-APPL-SN-297486	c 35	N83-24828 *		US-PATENT-APPL-SN-315278	c 51	N83-28849 *
US-PATENT-APPL-SN-280390	c 37	N74-15128 *		US-PATENT-APPL-SN-297488	c 37	N84-16561 *		US-PATENT-APPL-SN-315583	c 35	N84-33769 *
US-PATENT-APPL-SN-280580	c 12	N71-21089 *		US-PATENT-APPL-SN-297524	c 33	N84-14424 *		US-PATENT-APPL-SN-315584	c 23	N84-16255 *
US-PATENT-APPL-SN-280776	c 14	N70-40273 *		US-PATENT-APPL-SN-298150	c 33	N84-22886 *		US-PATENT-APPL-SN-315587	c 25	N83-31743 *
US-PATENT-APPL-SN-280777	c 08	N70-41961 *		US-PATENT-APPL-SN-298752	c 25	N90-23517 *		US-PATENT-APPL-SN-315588	c 05	N84-22551 *
US-PATENT-APPL-SN-281069	c 14	N70-35394 *		US-PATENT-APPL-SN-298156	c 37	N75-13261 *		US-PATENT-APPL-SN-316477	c 18	N71-10772 *
US-PATENT-APPL-SN-281715	c 21	N70-33279 *		US-PATENT-APPL-SN-298156	c 26	N75-19408 *		US-PATENT-APPL-SN-316618	c 07	N74-15453 *
US-PATENT-APPL-SN-281875	c 25	N74-18551 *		US-PATENT-APPL-SN-298157	c 33	N74-21850 *		US-PATENT-APPL-SN-31702	c 16	N73-16536 *
US-PATENT-APPL-SN-281876	c 52	N74-20726 *		US-PATENT-APPL-SN-298799	c 14	N71-15662 *		US-PATENT-APPL-SN-31703	c 09	N72-21244 *
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US-PATENT-APPL-SN-281908	c 25	N75-12086 *		US-PATENT-APPL-SN-299042	c 15	N71-15918 *		US-PATENT-APPL-SN-317389	c 18	N70-41583 *
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US-PATENT-APPL-SN-282191	c 35	N83-29651 *		US-PATENT-APPL-SN-29917	c 26	N74-10521 *		US-PATENT-APPL-SN-317567	c 36	N75-15029 *
US-PATENT-APPL-SN-282192	c 74	N83-21849 *		US-PATENT-APPL-SN-29917	c 37	N74-13179 *		US-PATENT-APPL-SN-317658	c 36	N84-16542 *
US-PATENT-APPL-SN-282298	c 33	N85-29144 *		US-PATENT-APPL-SN-29979	c 09	N75-15662 *		US-PATENT-APPL-SN-317931	c 51	N90-18852 *
US-PATENT-APPL-SN-28235	c 10	N72-17171 *		US-PATENT-APPL-SN-300113	c 33	N70-33344 *		US-PATENT-APPL-SN-317977	c 25	N83-36118 *
US-PATENT-APPL-SN-282817	c 15	N70-40156 *		US-PATENT-APPL-SN-300712	c 15	N70-35407 *		US-PATENT-APPL-SN-318151	c 75	N74-30156 *
US-PATENT-APPL-SN-282818	c 14	N71-14996 *		US-PATENT-APPL-SN-300957	c 33	N71-29053 *		US-PATENT-APPL-SN-318152	c 52	N74-20728 *
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US-PATENT-APPL-SN-284245	c 33	N74-17928 *		US-PATENT-APPL-SN-301077	c 33	N84-14421 *		US-PATENT-APPL-SN-318443	c 03	N70-34667 *
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US-PATENT-APPL-SN-284266	c 15	N71-16077 *		US-PATENT-APPL-SN-301417	c 71	N74-21014 *		US-PATENT-APPL-SN-31885	c 10	N72-17172 *
US-PATENT-APPL-SN-284286	c 44	N84-28203 *		US-PATENT-APPL-SN-301418	c 52	N76-29894 *		US-PATENT-APPL-SN-319150	c 33	N75-19519 *
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US-PATENT-APPL-SN-284288	c 33	N83-36356 *		US-PATENT-APPL-SN-301683	c 07	N71-15907 *		US-PATENT-APPL-SN-319892	c 07	N71-10609 *
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US-PATENT-APPL-SN-286620	c 15	N71-30028 *		US-PATENT-APPL-SN-303670	c 37	N82-11469 *	#	US-PATENT-APPL-SN-320595	c 26	N70-40015 *
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US-PATENT-APPL-SN-287149	c 35	N74-32878 *		US-PATENT-APPL-SN-303672	c 71	N83-32516 *		US-PATENT-APPL-SN-321179	c 27	N74-21156 *
US-PATENT-APPL-SN-287150	c 37	N74-21065 *		US-PATENT-APPL-SN-304147	c 27	N90-23541 *		US-PATENT-APPL-SN-321180	c 05	N76-29217 *
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US-PATENT-APPL-SN-288847	c 33	N74-27862 *		US-PATENT-APPL-SN-304698	c 32	N70-41579 *		US-PATENT-APPL-SN-322316	c 31	N83-19947 *
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US-PATENT-APPL-SN-289048	c 37	N74-21057 *		US-PATENT-APPL-SN-305638	c 34	N74-23066 *		US-PATENT-APPL-SN-322998	c 35	N74-32877 *
US-PATENT-APPL-SN-289049	c 19	N74-15089 *		US-PATENT-APPL-SN-305639	c 37	N74-27904 *		US-PATENT-APPL-SN-323182	c 03	N70-41884 *
US-PATENT-APPL-SN-289050	c 20	N74-32919 *		US-PATENT-APPL-SN-306652	c 33	N74-32712 *		US-PATENT-APPL-SN-323236	c 24	N90-21822 *
US-PATENT-APPL-SN-290021	c 37	N74-23064 *		US-PATENT-APPL-SN-307269	c 24	N71-10560 *		US-PATENT-APPL-SN-323748	c 61	N90-16411 *
US-PATENT-APPL-SN-290022	c 09	N73-12214 *	#	US-PATENT-APPL-SN-307270	c 10	N71-16030 *		US-PATENT-APPL-SN-324029	c 32	N74-27612 *
US-PATENT-APPL-SN-290030	c 33	N74-12887 *		US-PATENT-APPL-SN-307271	c 09	N71-22999 *		US-PATENT-APPL-SN-32496	c 15	N70-37925 *
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US-PATENT-APPL-SN-290867	c 28	N70-39931 *		US-PATENT-APPL-SN-307727	c 32	N74-20813 *		US-PATENT-APPL-SN-325083	c 33	N84-16456 *
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US-PATENT-APPL-SN-427395	c 54	N75-27760 *	US-PATENT-APPL-SN-443297	c 33	N90-27042 *	US-PATENT-APPL-SN-460877	c 33	N71-23085 *
US-PATENT-APPL-SN-427775	c 27	N76-22376 *	US-PATENT-APPL-SN-443414	c 27	N90-16925 *	US-PATENT-APPL-SN-461073	c 33	N75-26246 *
US-PATENT-APPL-SN-427990	c 06	N71-23527 *	US-PATENT-APPL-SN-443523	c 20	N90-15130 *	US-PATENT-APPL-SN-461477	c 37	N75-19686 *
US-PATENT-APPL-SN-428444	c 44	N76-18642 *	US-PATENT-APPL-SN-443539	c 32	N90-16975 *	US-PATENT-APPL-SN-461724	c 31	N85-21404 *
US-PATENT-APPL-SN-428444	c 44	N76-29704 *	US-PATENT-APPL-SN-444087	c 02	N71-11041 *	US-PATENT-APPL-SN-461765	c 17	N71-23046 *
US-PATENT-APPL-SN-428882	c 31	N70-41948 *	US-PATENT-APPL-SN-444124	c 52	N84-23095 *	US-PATENT-APPL-SN-461788	c 27	N85-21349 *
US-PATENT-APPL-SN-428887	c 33	N71-29051 *	US-PATENT-APPL-SN-444125	c 20	N83-17588 *	US-PATENT-APPL-SN-462341	c 44	N76-31666 *
US-PATENT-APPL-SN-428890	c 02	N70-41630 *	US-PATENT-APPL-SN-444149	c 47	N84-28292 *	US-PATENT-APPL-SN-462424	c 24	N77-19171 *
US-PATENT-APPL-SN-428992	c 34	N77-18382 *	US-PATENT-APPL-SN-444150	c 35	N84-22933 *	US-PATENT-APPL-SN-462497	c 25	N85-21279 *
US-PATENT-APPL-SN-428993	c 45	N75-27585 *	US-PATENT-APPL-SN-444248	c 52	N90-16391 *	US-PATENT-APPL-SN-462508	c 35	N86-19580 *
US-PATENT-APPL-SN-428994	c 32	N75-21486 *	US-PATENT-APPL-SN-445178	c 37	N76-15461 *	US-PATENT-APPL-SN-462705	c 37	N75-19684 *
US-PATENT-APPL-SN-428994	c 32	N76-16249 *	US-PATENT-APPL-SN-445292	c 11	N71-23030 *	US-PATENT-APPL-SN-462762	c 12	N69-21466 *
US-PATENT-APPL-SN-428995	c 51	N75-25503 *	US-PATENT-APPL-SN-445398	c 74	N78-15880 *	US-PATENT-APPL-SN-462763	c 14	N71-22991 *
US-PATENT-APPL-SN-429437	c 35	N75-23910 *	US-PATENT-APPL-SN-445807	c 14	N71-22996 *	US-PATENT-APPL-SN-462844	c 33	N75-19520 *
US-PATENT-APPL-SN-429514	c 24	N90-26881 *	US-PATENT-APPL-SN-446071	c 25	N82-29371 *	US-PATENT-APPL-SN-462903	c 37	N76-14461 *
US-PATENT-APPL-SN-429516	c 05	N90-15094 *	US-PATENT-APPL-SN-446131	c 14	N71-22992 *	US-PATENT-APPL-SN-463456	c 37	N85-30333 *
US-PATENT-APPL-SN-429734	c 04	N80-18379 *	US-PATENT-APPL-SN-446560	c 12	N76-15189 *	US-PATENT-APPL-SN-463720	c 62	N90-27384 *
US-PATENT-APPL-SN-429737	c 34	N90-27071 *	US-PATENT-APPL-SN-446562	c 36	N76-14447 *	US-PATENT-APPL-SN-463925	c 74	N76-30053 *
US-PATENT-APPL-SN-429739	c 25	N90-16887 *	US-PATENT-APPL-SN-446564	c 35	N75-26334 *	US-PATENT-APPL-SN-464720	c 32	N76-16249 *
US-PATENT-APPL-SN-429932	c 05	N71-20268 *	US-PATENT-APPL-SN-446567	c 34	N76-27515 *	US-PATENT-APPL-SN-464721	c 37	N75-26372 *
US-PATENT-APPL-SN-430192	c 18	N71-27170 *	US-PATENT-APPL-SN-446568	c 37	N76-23570 *	US-PATENT-APPL-SN-464722	c 35	N76-22509 *
US-PATENT-APPL-SN-430226	c 18	N71-23658 *	US-PATENT-APPL-SN-446569	c 77	N75-20140 *	US-PATENT-APPL-SN-464723	c 33	N75-30429 *
US-PATENT-APPL-SN-430470	c 27	N90-26955 *	US-PATENT-APPL-SN-447124	c 35	N75-30503 *	US-PATENT-APPL-SN-464878	c 10	N71-22986 *
US-PATENT-APPL-SN-430496	c 26	N75-29236 *	US-PATENT-APPL-SN-447371	c 27	N84-22746 *	US-PATENT-APPL-SN-464879	c 14	N71-21072 *
US-PATENT-APPL-SN-430748	c 76	N79-21910 *	US-PATENT-APPL-SN-447927	c 11	N71-10776 *	US-PATENT-APPL-SN-464880	c 33	N71-21586 *
US-PATENT-APPL-SN-430776	c 03	N70-41954 *	US-PATENT-APPL-SN-447928	c 15	N71-10577 *	US-PATENT-APPL-SN-464885	c 15	N71-22997 *
US-PATENT-APPL-SN-430777	c 18	N71-24184 *	US-PATENT-APPL-SN-447930	c 14	N69-39896 *	US-PATENT-APPL-SN-465363	c 52	N84-26389 *
US-PATENT-APPL-SN-430778	c 03	N71-10728 *	US-PATENT-APPL-SN-447933	c 03	N69-21337 *	US-PATENT-APPL-SN-465364	c 44	N85-20530 *
US-PATENT-APPL-SN-430780	c 03	N71-12260 *	US-PATENT-APPL-SN-448320	c 91	N76-30131 *	US-PATENT-APPL-SN-465365	c 43	N86-18711 *
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US-PATENT-APPL-SN-431420	c 37	N85-29282 *	US-PATENT-APPL-SN-448323	c 18	N76-17185 *	US-PATENT-APPL-SN-465367	c 27	N84-22748 *
US-PATENT-APPL-SN-431448	c 37	N84-22957 *	US-PATENT-APPL-SN-448325	c 33	N75-26244 *	US-PATENT-APPL-SN-465369	c 76	N86-26780 *
US-PATENT-APPL-SN-431886	c 18	N84-27787 *	US-PATENT-APPL-SN-448365	c 10	N71-26414 *	US-PATENT-APPL-SN-465370	c 52	N83-29991 *
US-PATENT-APPL-SN-432025	c 15	N71-21531 *	US-PATENT-APPL-SN-448881	c 32	N85-29118 *	US-PATENT-APPL-SN-466390	c 28	N71-20330 *
US-PATENT-APPL-SN-432026	c 07	N71-23405 *	US-PATENT-APPL-SN-448898	c 15	N70-41310 *	US-PATENT-APPL-SN-466868	c 22	N71-23599 *
US-PATENT-APPL-SN-432027	c 21	N70-41930 *	US-PATENT-APPL-SN-449118	c 33	N75-19524 *	US-PATENT-APPL-SN-466873	c 17	N71-20743 *
US-PATENT-APPL-SN-432028	c 15	N71-22723 *	US-PATENT-APPL-SN-449153	c 54	N75-27761 *	US-PATENT-APPL-SN-466875	c 08	N71-22707 *
US-PATENT-APPL-SN-432030	c 12	N71-20896 *	US-PATENT-APPL-SN-449210	c 27	N90-26956 *	US-PATENT-APPL-SN-467820	c 28	N71-26779 *
US-PATENT-APPL-SN-432032	c 15	N69-24322 *	US-PATENT-APPL-SN-449901	c 28	N70-41967 *	US-PATENT-APPL-SN-468614	c 60	N77-14751 *
US-PATENT-APPL-SN-432057	c 33	N84-14423 *	US-PATENT-APPL-SN-449902	c 14	N70-41681 *	US-PATENT-APPL-SN-468614	c 60	N77-32731 *
US-PATENT-APPL-SN-432433	c 15	N71-22705 *	US-PATENT-APPL-SN-450166	c 33	N84-27975 *	US-PATENT-APPL-SN-468614	c 60	N78-10709 *
US-PATENT-APPL-SN-433196	c 44	N84-23019 *	US-PATENT-APPL-SN-450319	c 33	N84-33661 *	US-PATENT-APPL-SN-468647	c 21	N71-10771 *
US-PATENT-APPL-SN-43327	c 15	N72-26371 *	US-PATENT-APPL-SN-450500	c 37	N76-18455 *	US-PATENT-APPL-SN-468655	c 15	N69-21471 *
US-PATENT-APPL-SN-433598	c 27	N84-22747 *	US-PATENT-APPL-SN-450502	c 37	N76-18456 *	US-PATENT-APPL-SN-469011	c 11	N69-21540 *
US-PATENT-APPL-SN-433804	c 16	N90-16781 *	US-PATENT-APPL-SN-450504	c 23	N77-17161 *	US-PATENT-APPL-SN-469012	c 25	N71-20747 *
US-PATENT-APPL-SN-433812	c 27	N90-15260 *	US-PATENT-APPL-SN-450505	c 37	N75-31446 *	US-PATENT-APPL-SN-469013	c 14	N69-27423 *
US-PATENT-APPL-SN-433821	c 09	N71-16089 *	US-PATENT-APPL-SN-450503	c 33	N75-31330 *	US-PATENT-APPL-SN-469371	c 05	N86-19310 *
US-PATENT-APPL-SN-433863	c 24	N90-15147 *	US-PATENT-APPL-SN-451596	c 17	N71-29137 *	US-PATENT-APPL-SN-469864	c 37	N86-19605 *
US-PATENT-APPL-SN-433881	c 37	N90-17138 *	US-PATENT-APPL-SN-451896	c 26	N86-32551 *	US-PATENT-APPL-SN-469866	c 27	N84-22749 *
US-PATENT-APPL-SN-433968	c 33	N75-25041 *	US-PATENT-APPL-SN-452484	c 24	N84-11213 *	US-PATENT-APPL-SN-470113	c 17	N87-16863 *
US-PATENT-APPL-SN-434084	c 33	N84-27974 *	US-PATENT-APPL-SN-452485	c 25	N90-11824 *	US-PATENT-APPL-SN-470114	c 25	N83-24572 *
US-PATENT-APPL-SN-434085	c 33	N85-29145 *	US-PATENT-APPL-SN-452466	c 03	N84-33394 *	US-PATENT-APPL-SN-470428	c 33	N76-16332 *
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US-PATENT-APPL-SN-434143	c 15	N71-15871 *	US-PATENT-APPL-SN-452767	c 05	N75-25915 *	US-PATENT-APPL-SN-470480	c 20	N90-26073 *
US-PATENT-APPL-SN-434148	c 31	N71-24750 *	US-PATENT-APPL-SN-452768	c 52	N76-30793 *	US-PATENT-APPL-SN-47061	c 26	N72-25680 *
US-PATENT-APPL-SN-434672	c 34	N84-14461 *	US-PATENT-APPL-SN-452769	c 44	N76-16612 *	US-PATENT-APPL-SN-47062	c 15	N72-17451 *
US-PATENT-APPL-SN-434674	c 34	N83-35307 *	US-PATENT-APPL-SN-452770	c 33	N75-31332 *	US-PATENT-APPL-SN-47063	c 33	N72-25911 *
US-PATENT-APPL-SN-435387	c 10	N70-42032 *	US-PATENT-APPL-SN-452944	c 18	N71-24183 *	US-PATENT-APPL-SN-47063	c 33	N73-25952 *
US-PATENT-APPL-SN-435433	c 14	N71-30026 *	US-PATENT-APPL-SN-452945	c 18	N69-39979 *	US-PATENT-APPL-SN-470663	c 37	N90-26341 *
US-PATENT-APPL-SN-435511	c 27	N84-27886 *	US-PATENT-APPL-SN-453115	c 32	N76-14321 *	US-PATENT-APPL-SN-470902	c 06	N71-28808 *
US-PATENT-APPL-SN-435756	c 12	N71-16894 *	US-PATENT-APPL-SN-453225	c 15	N71-24833 *	US-PATENT-APPL-SN-471154	c 09	N73-28084 *
US-PATENT-APPL-SN-436313	c 54	N77-32721 *	US-PATENT-APPL-SN-453227	c 31	N71-10582 *	US-PATENT-APPL-SN-47120	c 31	N70-33942 *
US-PATENT								

US-PATENT-APPL-SN-472066	c 31	N70-42075 *	US-PATENT-APPL-SN-487934	c 15	N71-21530 *	US-PATENT-APPL-SN-505881	c 09	N76-24280 *
US-PATENT-APPL-SN-472372	c 07	N71-20791 *	US-PATENT-APPL-SN-487939	c 14	N71-23040 *	US-PATENT-APPL-SN-506135	c 08	N71-20905 *
US-PATENT-APPL-SN-472643	c 33	N79-21265 *	US-PATENT-APPL-SN-487940	c 10	N71-26434 *	US-PATENT-APPL-SN-506137	c 15	N71-23049 *
US-PATENT-APPL-SN-472747	c 31	N71-16081 *	US-PATENT-APPL-SN-488381	c 14	N73-32321 *	US-PATENT-APPL-SN-506137	c 76	N90-26685 *
US-PATENT-APPL-SN-472775	c 35	N75-33369 *	US-PATENT-APPL-SN-488578	c 07	N80-27517 *	US-PATENT-APPL-SN-506477	c 33	N85-29146 *
US-PATENT-APPL-SN-473024	c 62	N90-27385 *	US-PATENT-APPL-SN-488616	c 76	N76-18117 *	US-PATENT-APPL-SN-506803	c 24	N79-25143 *
US-PATENT-APPL-SN-473030	c 37	N90-27116 *	US-PATENT-APPL-SN-488745	c 28	N75-27127 *	US-PATENT-APPL-SN-506804	c 35	N76-18402 *
US-PATENT-APPL-SN-473064	c 37	N90-27112 *	US-PATENT-APPL-SN-489008	c 23	N75-30256 *	US-PATENT-APPL-SN-506908	c 09	N71-18843 *
US-PATENT-APPL-SN-473242	c 34	N90-26292 *	US-PATENT-APPL-SN-489009	c 33	N76-19339 *	US-PATENT-APPL-SN-507254	c 14	N71-22990 *
US-PATENT-APPL-SN-473498	c 20	N85-21256 *	US-PATENT-APPL-SN-489442	c 25	N69-39884 *	US-PATENT-APPL-SN-507257	c 09	N71-19449 *
US-PATENT-APPL-SN-473499	c 74	N86-21348 *	US-PATENT-APPL-SN-489675	c 05	N85-29947 *	US-PATENT-APPL-SN-507623	c 31	N85-29083 *
US-PATENT-APPL-SN-473535	c 31	N71-15637 *	US-PATENT-APPL-SN-491054	c 14	N71-23174 *	US-PATENT-APPL-SN-507624	c 76	N85-30922 *
US-PATENT-APPL-SN-473537	c 08	N71-15908 *	US-PATENT-APPL-SN-491058	c 09	N71-23443 *	US-PATENT-APPL-SN-507625	c 76	N86-20150 *
US-PATENT-APPL-SN-473827	c 35	N86-32698 *	US-PATENT-APPL-SN-491059	c 09	N71-23015 *	US-PATENT-APPL-SN-507626	c 34	N85-29179 *
US-PATENT-APPL-SN-473973	c 02	N77-10001 *	US-PATENT-APPL-SN-491113	c 35	N86-19581 *	US-PATENT-APPL-SN-508154	c 54	N90-27261 *
US-PATENT-APPL-SN-474400	c 07	N73-20174 *	US-PATENT-APPL-SN-491125	c 27	N84-22750 *	US-PATENT-APPL-SN-508169	c 18	N71-27397 *
US-PATENT-APPL-SN-474411	c 09	N70-34559 *	US-PATENT-APPL-SN-491416	c 35	N75-33368 *	US-PATENT-APPL-SN-508170	c 08	N71-22710 *
US-PATENT-APPL-SN-474443	c 09	N72-17152 *	US-PATENT-APPL-SN-491417	c 37	N76-19437 *	US-PATENT-APPL-SN-508316	c 27	N90-26954 *
US-PATENT-APPL-SN-474531	c 31	N71-23009 *	US-PATENT-APPL-SN-491418	c 31	N76-31365 *	US-PATENT-APPL-SN-508371	c 05	N85-21147 *
US-PATENT-APPL-SN-474744	c 35	N76-14431 *	US-PATENT-APPL-SN-491419	c 32	N76-15330 *	US-PATENT-APPL-SN-508372	c 43	N83-29783 *
US-PATENT-APPL-SN-474745	c 37	N76-14463 *	US-PATENT-APPL-SN-491845	c 28	N71-15659 *	US-PATENT-APPL-SN-508386	c 25	N90-26098 *
US-PATENT-APPL-SN-474815	c 33	N79-21264 *	US-PATENT-APPL-SN-492282	c 27	N85-20124 *	US-PATENT-APPL-SN-508601	c 15	N71-22878 *
US-PATENT-APPL-SN-475299	c 31	N71-17879 *	US-PATENT-APPL-SN-492344	c 05	N71-22896 *	US-PATENT-APPL-SN-508784	c 76	N76-25049 *
US-PATENT-APPL-SN-475338	c 54	N75-27758 *	US-PATENT-APPL-SN-492964	c 25	N85-21280 *	US-PATENT-APPL-SN-508873	c 14	N71-23240 *
US-PATENT-APPL-SN-475337	c 51	N76-29891 *	US-PATENT-APPL-SN-493179	c 23	N85-35227 *	US-PATENT-APPL-SN-509460	c 01	N71-13411 *
US-PATENT-APPL-SN-475338	c 35	N76-15431 *	US-PATENT-APPL-SN-493359	c 20	N76-21275 *	US-PATENT-APPL-SN-510136	c 18	N84-33450 *
US-PATENT-APPL-SN-476244	c 33	N84-22885 *	US-PATENT-APPL-SN-493363	c 30	N76-12390 *	US-PATENT-APPL-SN-510137	c 37	N85-34401 *
US-PATENT-APPL-SN-476759	c 03	N70-42073 *	US-PATENT-APPL-SN-493864	c 23	N90-20133 *	US-PATENT-APPL-SN-510150	c 10	N71-26103 *
US-PATENT-APPL-SN-476761	c 11	N71-10748 *	US-PATENT-APPL-SN-493864	c 23	N90-23475 *	US-PATENT-APPL-SN-510155	c 06	N71-11235 *
US-PATENT-APPL-SN-476763	c 09	N69-21313 *	US-PATENT-APPL-SN-493865	c 24	N86-19380 *	US-PATENT-APPL-SN-510474	c 15	N71-23810 *
US-PATENT-APPL-SN-477333	c 28	N70-41922 *	US-PATENT-APPL-SN-493866	c 71	N84-28568 *	US-PATENT-APPL-SN-510475	c 14	N71-23087 *
US-PATENT-APPL-SN-478129	c 25	N80-27431 *	US-PATENT-APPL-SN-493942	c 14	N71-17659 *	US-PATENT-APPL-SN-510677	c 44	N77-18571 *
US-PATENT-APPL-SN-478130	c 74	N85-23396 *	US-PATENT-APPL-SN-493943	c 15	N71-21529 *	US-PATENT-APPL-SN-511299	c 15	N71-22798 *
US-PATENT-APPL-SN-478131	c 26	N87-14482 *	US-PATENT-APPL-SN-494280	c 28	N71-23081 *	US-PATENT-APPL-SN-511334	c 36	N77-32478 *
US-PATENT-APPL-SN-478491	c 14	N69-21363 *	US-PATENT-APPL-SN-494282	c 15	N69-39735 *	US-PATENT-APPL-SN-511346	c 15	N77-10113 *
US-PATENT-APPL-SN-478800	c 37	N76-19436 *	US-PATENT-APPL-SN-494283	c 31	N71-24035 *	US-PATENT-APPL-SN-511362	c 33	N85-29147 *
US-PATENT-APPL-SN-478802	c 35	N75-29381 *	US-PATENT-APPL-SN-494287	c 03	N71-22974 *	US-PATENT-APPL-SN-511363	c 25	N88-23846 *
US-PATENT-APPL-SN-478803	c 31	N76-14284 *	US-PATENT-APPL-SN-494739	c 07	N71-26291 *	US-PATENT-APPL-SN-5114	c 06	N72-25150 *
US-PATENT-APPL-SN-478953	c 15	N71-23256 *	US-PATENT-APPL-SN-495021	c 44	N78-13526 *	US-PATENT-APPL-SN-511564	c 09	N69-39885 *
US-PATENT-APPL-SN-479357	c 36	N77-19416 *	US-PATENT-APPL-SN-495022	c 60	N77-12721 *	US-PATENT-APPL-SN-511567	c 05	N71-12336 *
US-PATENT-APPL-SN-479485	c 27	N90-26952 *	US-PATENT-APPL-SN-495380	c 37	N85-29285 *	US-PATENT-APPL-SN-511887	c 35	N76-15436 *
US-PATENT-APPL-SN-480210	c 11	N71-21474 *	US-PATENT-APPL-SN-495380	c 37	N87-22976 *	US-PATENT-APPL-SN-511894	c 03	N76-32140 *
US-PATENT-APPL-SN-480211	c 14	N71-26135 *	US-PATENT-APPL-SN-495381	c 24	N84-22695 *	US-PATENT-APPL-SN-512352	c 15	N70-33330 *
US-PATENT-APPL-SN-480385	c 74	N90-27487 *	US-PATENT-APPL-SN-495381	c 24	N85-21267 *	US-PATENT-APPL-SN-512509	c 26	N75-27125 *
US-PATENT-APPL-SN-480449	c 33	N90-27040 *	US-PATENT-APPL-SN-496205	c 14	N71-22965 *	US-PATENT-APPL-SN-512559	c 23	N71-22881 *
US-PATENT-APPL-SN-480685	c 18	N90-26860 *	US-PATENT-APPL-SN-496779	c 05	N76-29217 *	US-PATENT-APPL-SN-512561	c 16	N71-25914 *
US-PATENT-APPL-SN-481020	c 36	N83-29681 *	US-PATENT-APPL-SN-498167	c 03	N71-10608 *	US-PATENT-APPL-SN-512562	c 16	N71-24074 *
US-PATENT-APPL-SN-481086	c 33	N84-33660 *	US-PATENT-APPL-SN-498168	c 28	N71-21822 *	US-PATENT-APPL-SN-512795	c 27	N84-22745 *
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US-PATENT-APPL-SN-481537	c 18	N90-26861 *	US-PATENT-APPL-SN-499126	c 23	N86-19376 *	US-PATENT-APPL-SN-51317	c 14	N73-30389 *
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 US-PATENT-APPL-SN-835060 ..... c 02 N71-26110 \*  
 US-PATENT-APPL-SN-835146 ..... c 15 N70-33264 \*  
 US-PATENT-APPL-SN-835152 ..... c 28 N70-38199 \*  
 US-PATENT-APPL-SN-835153 ..... c 31 N71-17680 \*  
 US-PATENT-APPL-SN-835419 ..... c 33 N80-18285 \*  
 US-PATENT-APPL-SN-835544 ..... c 33 N79-14305 \*  
 US-PATENT-APPL-SN-835628 ..... c 35 N79-14947 \*  
 US-PATENT-APPL-SN-836280 ..... c 14 N73-14428 \*  
 US-PATENT-APPL-SN-836280 ..... c 35 N75-25122 \*  
 US-PATENT-APPL-SN-836367 ..... c 09 N71-24804 \*

## US-PATENT-APPL-SN-84961

US-PATENT-APPL-SN-837259 ..... c 54 N79-24652 \*  
 US-PATENT-APPL-SN-837260 ..... c 37 N78-27423 \*  
 US-PATENT-APPL-SN-837377 ..... c 15 N71-26148 \*  
 US-PATENT-APPL-SN-837378 ..... c 15 N71-24865 \*  
 US-PATENT-APPL-SN-837513 ..... c 44 N81-29525 \*  
 US-PATENT-APPL-SN-837513 ..... c 44 N82-28780 \*  
 US-PATENT-APPL-SN-837784 ..... c 28 N80-20402 \*  
 US-PATENT-APPL-SN-837794 ..... c 28 N81-14103 \*  
 US-PATENT-APPL-SN-837795 ..... c 36 N80-14384 \*  
 US-PATENT-APPL-SN-837796 ..... c 35 N79-14345 \*  
 US-PATENT-APPL-SN-837825 ..... c 15 N71-27006 \*  
 US-PATENT-APPL-SN-837830 ..... c 02 N71-27088 \*  
 US-PATENT-APPL-SN-83816 ..... c 44 N74-14784 \*  
 US-PATENT-APPL-SN-838278 ..... c 60 N74-20836 \*  
 US-PATENT-APPL-SN-838308 ..... c 52 N80-27072 \*  
 US-PATENT-APPL-SN-838336 ..... c 44 N79-11470 \*  
 US-PATENT-APPL-SN-838337 ..... c 31 N79-17029 \*  
 US-PATENT-APPL-SN-838630 ..... c 14 N71-28993 \*  
 US-PATENT-APPL-SN-838648 ..... c 33 N87-23879 \*  
 US-PATENT-APPL-SN-838649 ..... c 34 N86-26575 \* #  
 US-PATENT-APPL-SN-838654 ..... c 27 N90-21198 \*  
 US-PATENT-APPL-SN-838655 ..... c 27 N87-22848 \*  
 US-PATENT-APPL-SN-839934 ..... c 07 N72-20140 \*  
 US-PATENT-APPL-SN-839935 ..... c 15 N71-24895 \*  
 US-PATENT-APPL-SN-839941 ..... c 07 N71-26181 \*  
 US-PATENT-APPL-SN-839963 ..... c 27 N79-33316 \*  
 US-PATENT-APPL-SN-839963 ..... c 27 N81-14078 \*  
 US-PATENT-APPL-SN-839994 ..... c 28 N71-28915 \*  
 US-PATENT-APPL-SN-84002 ..... c 08 N73-20217 \*  
 US-PATENT-APPL-SN-840176 ..... c 28 N71-27095 \*  
 US-PATENT-APPL-SN-840308 ..... c 07 N71-33613 \*  
 US-PATENT-APPL-SN-840359 ..... c 23 N71-29125 \*  
 US-PATENT-APPL-SN-840816 ..... c 27 N87-28657 \*  
 US-PATENT-APPL-SN-840870 ..... c 15 N71-26189 \*  
 US-PATENT-APPL-SN-840900 ..... c 26 N87-25455 \*  
 US-PATENT-APPL-SN-840983 ..... c 05 N70-33285 \*  
 US-PATENT-APPL-SN-841278 ..... c 33 N77-23136 \*  
 US-PATENT-APPL-SN-841845 ..... c 14 N73-32317 \*  
 US-PATENT-APPL-SN-84212 ..... c 27 N74-17283 \*  
 US-PATENT-APPL-SN-842170 ..... c 11 N70-33278 \*  
 US-PATENT-APPL-SN-842171 ..... c 11 N70-33329 \*  
 US-PATENT-APPL-SN-84289 ..... c 15 N73-14469 \*  
 US-PATENT-APPL-SN-84290 ..... c 05 N73-20137 \*  
 US-PATENT-APPL-SN-843022 ..... c 11 N70-33287 \*  
 US-PATENT-APPL-SN-843032 ..... c 28 N70-14181 \*  
 US-PATENT-APPL-SN-843090 ..... c 27 N79-22300 \*  
 US-PATENT-APPL-SN-843251 ..... c 03 N72-11062 \*  
 US-PATENT-APPL-SN-843308 ..... c 32 N79-14268 \*  
 US-PATENT-APPL-SN-844225 ..... c 05 N72-25120 \*  
 US-PATENT-APPL-SN-844243 ..... c 37 N75-29426 \*  
 US-PATENT-APPL-SN-844315 ..... c 35 N77-21392 \*  
 US-PATENT-APPL-SN-844344 ..... c 24 N79-14156 \*  
 US-PATENT-APPL-SN-844346 ..... c 44 N79-11472 \*  
 US-PATENT-APPL-SN-844355 ..... c 03 N72-26031 \*  
 US-PATENT-APPL-SN-845365 ..... c 09 N71-13518 \*  
 US-PATENT-APPL-SN-845584 ..... c 27 N73-22710 \*  
 US-PATENT-APPL-SN-845807 ..... c 15 N72-11391 \*  
 US-PATENT-APPL-SN-845971 ..... c 11 N71-28629 \*  
 US-PATENT-APPL-SN-845972 ..... c 09 N70-11148 \* #  
 US-PATENT-APPL-SN-845973 ..... c 11 N71-24985 \*  
 US-PATENT-APPL-SN-845974 ..... c 33 N71-25353 \*  
 US-PATENT-APPL-SN-845990 ..... c 14 N71-27005 \*  
 US-PATENT-APPL-SN-845991 ..... c 14 N71-29134 \*  
 US-PATENT-APPL-SN-846427 ..... c 36 N88-14350 \*  
 US-PATENT-APPL-SN-846428 ..... c 34 N87-21255 \*  
 US-PATENT-APPL-SN-846429 ..... c 35 N88-29149 \*  
 US-PATENT-APPL-SN-846430 ..... c 82 N87-29372 \*  
 US-PATENT-APPL-SN-846439 ..... c 08 N87-23631 \*  
 US-PATENT-APPL-SN-846462 ..... c 07 N87-16828 \*  
 US-PATENT-APPL-SN-847023 ..... c 31 N70-37938 \*  
 US-PATENT-APPL-SN-847027 ..... c 03 N70-33343 \*  
 US-PATENT-APPL-SN-847276 ..... c 37 N81-32510 \*  
 US-PATENT-APPL-SN-847277 ..... c 31 N79-28370 \*  
 US-PATENT-APPL-SN-847278 ..... c 34 N79-20335 \*  
 US-PATENT-APPL-SN-847596 ..... c 15 N70-10867 \* #  
 US-PATENT-APPL-SN-847815 ..... c 52 N75-15270 \*  
 US-PATENT-APPL-SN-848282 ..... c 15 N72-21462 \*  
 US-PATENT-APPL-SN-848325 ..... c 06 N70-11251 \* #  
 US-PATENT-APPL-SN-848351 ..... c 06 N70-11252 \* #  
 US-PATENT-APPL-SN-848403 ..... c 33 N74-20659 \*  
 US-PATENT-APPL-SN-848403 ..... c 36 N75-27364 \*  
 US-PATENT-APPL-SN-848418 ..... c 43 N79-26439 \*  
 US-PATENT-APPL-SN-848419 ..... c 43 N80-23711 \*  
 US-PATENT-APPL-SN-848420 ..... c 43 N79-25443 \*  
 US-PATENT-APPL-SN-848421 ..... c 43 N80-14423 \*  
 US-PATENT-APPL-SN-848428 ..... c 25 N82-21268 \*  
 US-PATENT-APPL-SN-848481 ..... c 17 N70-33283 \*  
 US-PATENT-APPL-SN-848776 ..... c 07 N72-22127 \*  
 US-PATENT-APPL-SN-848793 ..... c 43 N79-31706 \*  
 US-PATENT-APPL-SN-848794 ..... c 44 N79-24431 \*  
 US-PATENT-APPL-SN-848805 ..... c 06 N72-17095 \*  
 US-PATENT-APPL-SN-848810 ..... c 07 N72-11148 \*  
 US-PATENT-APPL-SN-848811 ..... c 10 N71-26142 \*  
 US-PATENT-APPL-SN-849106 ..... c 09 N72-22197 \*  
 US-PATENT-APPL-SN-849274 ..... c 28 N79-14228 \*  
 US-PATENT-APPL-SN-84961 ..... c 02 N70-34178 \*



US-PATENT-APPL-SN-84962	c 21	N70-36943 *	US-PATENT-APPL-SN-883967	c 11	N71-27036 *	US-PATENT-APPL-SN-883094	c 54	N79-24651 *
US-PATENT-APPL-SN-8497	c 14	N72-11363 *	US-PATENT-APPL-SN-884020	c 15	N72-17454 *	US-PATENT-APPL-SN-883523	c 09	N72-32024 *
US-PATENT-APPL-SN-8498	c 05	N71-24729	US-PATENT-APPL-SN-884039	c 15	N72-22483 *	US-PATENT-APPL-SN-883524	c 09	N72-21246 *
US-PATENT-APPL-SN-850504	c 52	N81-14613 *	US-PATENT-APPL-SN-884097	c 07	N71-33606 *	US-PATENT-APPL-SN-883961	c 25	N80-16116 *
US-PATENT-APPL-SN-850504	c 52	N81-29764 *	US-PATENT-APPL-SN-88417	c 07	N72-25171 *	US-PATENT-APPL-SN-88435	c 35	N74-15090 *
US-PATENT-APPL-SN-850507	c 25	N79-14169 *	US-PATENT-APPL-SN-8850	c 03	N72-25021 *	US-PATENT-APPL-SN-885049	c 33	N79-23345 *
US-PATENT-APPL-SN-850586	c 31	N71-25434 *	US-PATENT-APPL-SN-885106	c 09	N72-22202 *	US-PATENT-APPL-SN-885065	c 35	N79-18296 *
US-PATENT-APPL-SN-850587	c 08	N72-21199 *	US-PATENT-APPL-SN-885109	c 14	N71-28933 *	US-PATENT-APPL-SN-885066	c 33	N80-26599 *
US-PATENT-APPL-SN-851298	c 15	N72-12409	US-PATENT-APPL-SN-885274	c 09	N72-17155 *	US-PATENT-APPL-SN-885067	c 33	N79-28415 *
US-PATENT-APPL-SN-851394	c 09	N71-24892 *	US-PATENT-APPL-SN-885298	c 15	N72-11388 *	US-PATENT-APPL-SN-885521	c 03	N72-28025 *
US-PATENT-APPL-SN-852131	c 15	N71-24836 *	US-PATENT-APPL-SN-885329	c 15	N71-29132 *	US-PATENT-APPL-SN-885571	c 09	N71-28886 *
US-PATENT-APPL-SN-852461	c 27	N89-18042 *	US-PATENT-APPL-SN-88548	c 09	N72-21243 *	US-PATENT-APPL-SN-885594	c 15	N71-29133 *
US-PATENT-APPL-SN-852466	c 37	N87-24689 *	US-PATENT-APPL-SN-885811	c 09	N71-27053 *	US-PATENT-APPL-SN-886121	c 39	N87-25601 *
US-PATENT-APPL-SN-852467	c 27	N87-24564 *	US-PATENT-APPL-SN-885909	c 14	N72-11364 *	US-PATENT-APPL-SN-886149	c 27	N87-28656 *
US-PATENT-APPL-SN-852468	c 72	N87-21661 *	US-PATENT-APPL-SN-886442	c 25	N72-24753 *	US-PATENT-APPL-SN-886149	c 27	N89-29538 *
US-PATENT-APPL-SN-852843	c 09	N72-22195 *	US-PATENT-APPL-SN-886784	c 11	N72-22246 *	US-PATENT-APPL-SN-887685	c 10	N72-20223 *
US-PATENT-APPL-SN-853349	c 35	N81-33448 *	US-PATENT-APPL-SN-887842	c 23	N72-27278 *	US-PATENT-APPL-SN-887698	c 09	N72-17153 *
US-PATENT-APPL-SN-853361	c 37	N87-22977 *	US-PATENT-APPL-SN-887843	c 14	N71-26161 *	US-PATENT-APPL-SN-887699	c 15	N72-17452 *
US-PATENT-APPL-SN-853641	c 33	N72-25913 *	US-PATENT-APPL-SN-887851	c 15	N72-22484 *	US-PATENT-APPL-SN-887700	c 07	N71-28980 *
US-PATENT-APPL-SN-853677	c 34	N79-31523 *	US-PATENT-APPL-SN-887886	c 74	N86-33138 *	US-PATENT-APPL-SN-887701	c 08	N71-29034 *
US-PATENT-APPL-SN-853679	c 35	N79-14346 *	US-PATENT-APPL-SN-887987	c 27	N88-23894 *	US-PATENT-APPL-SN-888362	c 33	N80-14330 *
US-PATENT-APPL-SN-853705	c 45	N79-12584 *	US-PATENT-APPL-SN-888249	c 33	N80-18286 *	US-PATENT-APPL-SN-888432	c 74	N81-17886 *
US-PATENT-APPL-SN-853716	c 09	N71-24904 *	US-PATENT-APPL-SN-888445	c 14	N72-17323 *	US-PATENT-APPL-SN-888434	c 51	N83-27569 *
US-PATENT-APPL-SN-853746	c 02	N72-11018 *	US-PATENT-APPL-SN-888529	c 08	N72-22167 *	US-PATENT-APPL-SN-889374	c 08	N72-25207 *
US-PATENT-APPL-SN-853763	c 07	N70-12616 *	US-PATENT-APPL-SN-888530	c 05	N72-11084 *	US-PATENT-APPL-SN-889375	c 10	N72-20222 *
US-PATENT-APPL-SN-853763	c 07	N72-33146 *	US-PATENT-APPL-SN-888775	c 09	N72-25261 *	US-PATENT-APPL-SN-889376	c 18	N71-26285 *
US-PATENT-APPL-SN-853855	c 17	N72-22530 *	US-PATENT-APPL-SN-888775	c 09	N73-27150 *	US-PATENT-APPL-SN-889387	c 09	N71-29035 *
US-PATENT-APPL-SN-853855	c 17	N72-28535 *	US-PATENT-APPL-SN-889260	c 05	N72-20097 *	US-PATENT-APPL-SN-889420	c 14	N72-25413 *
US-PATENT-APPL-SN-853856	c 16	N71-29131 *	US-PATENT-APPL-SN-889260	c 05	N73-25125 *	US-PATENT-APPL-SN-889422	c 09	N72-25529 *
US-PATENT-APPL-SN-853983	c 14	N70-33254 *	US-PATENT-APPL-SN-871069	c 06	N72-25148 *	US-PATENT-APPL-SN-889423	c 10	N72-22236 *
US-PATENT-APPL-SN-853984	c 21	N70-33181 *	US-PATENT-APPL-SN-871207	c 23	N86-32526 *	US-PATENT-APPL-SN-889437	c 15	N72-11392 *
US-PATENT-APPL-SN-854815	c 09	N71-24807 *	US-PATENT-APPL-SN-872222	c 05	N72-27103 *	US-PATENT-APPL-SN-889438	c 15	N72-18477 *
US-PATENT-APPL-SN-854920	c 15	N79-26100 *	US-PATENT-APPL-SN-872602	c 09	N72-22200 *	US-PATENT-APPL-SN-889478	c 08	N71-29138 *
US-PATENT-APPL-SN-855004	c 24	N72-11595 *	US-PATENT-APPL-SN-872664	c 08	N70-34675 *	US-PATENT-APPL-SN-889479	c 14	N72-17325 *
US-PATENT-APPL-SN-855364	c 52	N81-27763 *	US-PATENT-APPL-SN-873045	c 14	N72-20379 *	US-PATENT-APPL-SN-889551	c 21	N72-21624 *
US-PATENT-APPL-SN-85585	c 21	N70-35427 *	US-PATENT-APPL-SN-873259	c 08	N72-21200 *	US-PATENT-APPL-SN-889554	c 15	N72-20444 *
US-PATENT-APPL-SN-855879	c 27	N88-18725 *	US-PATENT-APPL-SN-873260	c 33	N72-17948 *	US-PATENT-APPL-SN-889555	c 09	N72-17154 *
US-PATENT-APPL-SN-855982	c 31	N88-14223 *	US-PATENT-APPL-SN-873793	c 14	N72-21407 *	US-PATENT-APPL-SN-889556	c 14	N72-18411 *
US-PATENT-APPL-SN-855983	c 03	N88-14083 *	US-PATENT-APPL-SN-874177	c 11	N72-25284 *	US-PATENT-APPL-SN-889557	c 11	N72-17183 *
US-PATENT-APPL-SN-856253	c 24	N74-19769 *	US-PATENT-APPL-SN-874319	c 35	N88-23966 *	US-PATENT-APPL-SN-889558	c 15	N72-22491 *
US-PATENT-APPL-SN-856258	c 05	N71-17599 *	US-PATENT-APPL-SN-874435	c 11	N71-33612 *	US-PATENT-APPL-SN-889563	c 15	N72-21464 *
US-PATENT-APPL-SN-856279	c 07	N72-21118 *	US-PATENT-APPL-SN-874673	c 27	N82-29454 *	US-PATENT-APPL-SN-889564	c 08	N72-31226 *
US-PATENT-APPL-SN-856282	c 08	N72-22166 *	US-PATENT-APPL-SN-874674	c 27	N82-29452 *	US-PATENT-APPL-SN-889670	c 39	N79-22537 *
US-PATENT-APPL-SN-856327	c 05	N72-16015 *	US-PATENT-APPL-SN-874675	c 27	N82-29455 *	US-PATENT-APPL-SN-889671	c 24	N81-14000 *
US-PATENT-APPL-SN-856328	c 14	N72-22441 *	US-PATENT-APPL-SN-874732	c 09	N71-29139 *	US-PATENT-APPL-SN-889671	c 24	N81-33235 *
US-PATENT-APPL-SN-856415	c 09	N71-26182 *	US-PATENT-APPL-SN-874733	c 15	N71-26635 *	US-PATENT-APPL-SN-889682	c 15	N72-25447 *
US-PATENT-APPL-SN-856460	c 25	N79-24073 *	US-PATENT-APPL-SN-874958	c 31	N71-15566 *	US-PATENT-APPL-SN-890445	c 18	N87-27713 *
US-PATENT-APPL-SN-856461	c 34	N79-12359 *	US-PATENT-APPL-SN-87550	c 06	N72-25146 *	US-PATENT-APPL-SN-890575	c 09	N87-25334 *
US-PATENT-APPL-SN-856462	c 34	N80-24573 *	US-PATENT-APPL-SN-87551	c 33	N73-16918 *	US-PATENT-APPL-SN-890577	c 27	N88-29040 *
US-PATENT-APPL-SN-856462	c 44	N81-24519 *	US-PATENT-APPL-SN-875798	c 37	N88-23978 *	US-PATENT-APPL-SN-890586	c 32	N87-15390 *
US-PATENT-APPL-SN-856464	c 36	N79-14382 *	US-PATENT-APPL-SN-875799	c 34	N87-28867 *	US-PATENT-APPL-SN-890683	c 37	N88-23981 *
US-PATENT-APPL-SN-856465	c 44	N80-14473 *	US-PATENT-APPL-SN-875849	c 07	N71-33696 *	US-PATENT-APPL-SN-890982	c 35	N88-29150 *
US-PATENT-APPL-SN-856466	c 72	N80-14877 *	US-PATENT-APPL-SN-875891	c 31	N86-32589 *	US-PATENT-APPL-SN-891243	c 44	N79-25482 *
US-PATENT-APPL-SN-857241	c 46	N74-23069 *	US-PATENT-APPL-SN-87597	c 33	N74-22864 *	US-PATENT-APPL-SN-891244	c 05	N79-24976 *
US-PATENT-APPL-SN-857445	c 05	N71-24728 *	US-PATENT-APPL-SN-876299	c 44	N80-18552 *	US-PATENT-APPL-SN-891356	c 35	N80-18359 *
US-PATENT-APPL-SN-857967	c 15	N72-20443 *	US-PATENT-APPL-SN-876431	c 33	N79-24254 *	US-PATENT-APPL-SN-891358	c 44	N80-14474 *
US-PATENT-APPL-SN-858596	c 35	N78-18395 *	US-PATENT-APPL-SN-876432	c 36	N80-18372 *	US-PATENT-APPL-SN-891370	c 20	N79-20179 *
US-PATENT-APPL-SN-858695	c 11	N72-22247 *	US-PATENT-APPL-SN-876438	c 52	N79-26772 *	US-PATENT-APPL-SN-891372	c 37	N79-22474 *
US-PATENT-APPL-SN-858762	c 08	N79-23097 *	US-PATENT-APPL-SN-876440	c 51	N80-16714 *	US-PATENT-APPL-SN-891373	c 31	N80-18231 *
US-PATENT-APPL-SN-858764	c 33	N79-10338 *	US-PATENT-APPL-SN-876441	c 74	N79-20856 *	US-PATENT-APPL-SN-891872	c 25	N82-24312 *
US-PATENT-APPL-SN-858765	c 33	N79-11313 *	US-PATENT-APPL-SN-876588	c 15	N72-25452 *	US-PATENT-APPL-SN-89209	c 09	N72-25248 *
US-PATENT-APPL-SN-858766	c 27	N79-14213 *	US-PATENT-APPL-SN-876588	c 25	N74-30502 *	US-PATENT-APPL-SN-89210	c 07	N73-26119 *
US-PATENT-APPL-SN-858767	c 32	N83-19968 *	US-PATENT-APPL-SN-877445	c 23	N82-28358 *	US-PATENT-APPL-SN-89211	c 14	N73-12448 *
US-PATENT-APPL-SN-858936	c 07	N80-18039 *	US-PATENT-APPL-SN-877717	c 14	N73-13417 *	US-PATENT-APPL-SN-89212	c 08	N72-25208 *
US-PATENT-APPL-SN-858950	c 35	N78-17359 *	US-PATENT-APPL-SN-877717	c 14	N73-13417 *	US-PATENT-APPL-SN-893382	c 34	N79-24285 *
US-PATENT-APPL-SN-86018	c 23	N71-30292 *	US-PATENT-APPL-SN-877990	c 14	N72-28437 *	US-PATENT-APPL-SN-893383	c 31	N81-27263 *
US-PATENT-APPL-SN-860404	c 37	N81-15364 *	US-PATENT-APPL-SN-878253	c 25	N81-33246 *	US-PATENT-APPL-SN-893657	c 51	N80-27027 *
US-PATENT-APPL-SN-860405	c 26	N79-22271 *	US-PATENT-APPL-SN-878539	c 35	N80-20560 *	US-PATENT-APPL-SN-893857	c 24	N81-17170 *
US-PATENT-APPL-SN-860406	c 24	N79-17916 *	US-PATENT-APPL-SN-878540	c 24	N82-26384 *	US-PATENT-APPL-SN-893857	c 24	N81-26179 *
US-PATENT-APPL-SN-860492	c 09	N72-20199 *	US-PATENT-APPL-SN-878541	c 33	N81-14220 *	US-PATENT-APPL-SN-893865	c 37	N81-24443 *
US-PATENT-APPL-SN-860493	c 14	N72-16283 *	US-PATENT-APPL-SN-878542	c 33	N79-28416 *	US-PATENT-APPL-SN-893903	c 60	N81-15706 *
US-PATENT-APPL-SN-860635	c 28	N72-17843 *	US-PATENT-APPL-SN-878730	c 08	N72-22164 *	US-PATENT-APPL-SN-894213	c 37	N80-23655 *
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US-PATENT-CLASS-126-271	c 44	N77-32582 *	US-PATENT-CLASS-128-2.05V	c 35	N76-24525 *	US-PATENT-CLASS-128-303R	c 52	N77-28716 *
US-PATENT-CLASS-126-271	c 44	N78-10554 *	US-PATENT-CLASS-128-2.05Z	c 54	N75-27760 *	US-PATENT-CLASS-128-305	c 05	N73-27062 *
US-PATENT-CLASS-126-271	c 44	N78-17460 *	US-PATENT-CLASS-128-2.05Z	c 52	N79-18580 *	US-PATENT-CLASS-128-305	c 52	N75-33640 *
US-PATENT-CLASS-126-271	c 44	N78-31525 *	US-PATENT-CLASS-128-2.05	c 05	N70-41329 *	US-PATENT-CLASS-128-305	c 52	N78-14773 *
US-PATENT-CLASS-126-271	c 44	N78-31526 *	US-PATENT-CLASS-128-2.05	c 04	N71-23185 *	US-PATENT-CLASS-128-325	c 52	N84-28388 *
US-PATENT-CLASS-126-271	c 44	N79-11471 *	US-PATENT-CLASS-128-2.05	c 05	N71-27234 *	US-PATENT-CLASS-128-327	c 52	N82-11770 *
US-PATENT-CLASS-126-271	c 44	N79-14526 *	US-PATENT-CLASS-128-2.06B	c 05	N75-24716 *	US-PATENT-CLASS-128-328	c 52	N84-39413 *
US-PATENT-CLASS-126-271	c 44	N79-14529 *	US-PATENT-CLASS-128-2.06E	c 52	N76-29896 *	US-PATENT-CLASS-128-329R	c 52	N79-27836 *
US-PATENT-CLASS-126-271	c 44	N79-18443 *	US-PATENT-CLASS-128-2.06F	c 52	N74-12778 *	US-PATENT-CLASS-128-346	c 52	N81-25560 *
US-PATENT-CLASS-126-271	c 44	N79-23481 *	US-PATENT-CLASS-128-2.06R	c 05	N73-27941 *	US-PATENT-CLASS-128-346	c 52	N84-11744 *
US-PATENT-CLASS-126-271	c 44	N79-24433 *	US-PATENT-CLASS-128-2.06R	c 52	N76-14757 *	US-PATENT-CLASS-128-346	c 52	N84-28388 *
US-PATENT-CLASS-126-400	c 44	N78-15560 *	US-PATENT-CLASS-128-2.06	c 05	N69-21925 #	US-PATENT-CLASS-128-348	c 52	N80-16725 *
US-PATENT-CLASS-126-400	c 44	N79-24433 *	US-PATENT-CLASS-128-2.06	c 05	N71-22896 *	US-PATENT-CLASS-128-379	c 52	N77-14736 *
US-PATENT-CLASS-126-400	c 44	N85-30474 *	US-PATENT-CLASS-128-2.06	c 09	N71-24618 *	US-PATENT-CLASS-128-38	c 54	N84-16803 *
US-PATENT-CLASS-126-415	c 44	N84-34792 *	US-PATENT-CLASS-128-2.06	c 05	N71-26293 *	US-PATENT-CLASS-128-400	c 52	N77-14736 *
US-PATENT-CLASS-126-415	c 44	N85-30474 *	US-PATENT-CLASS-128-2.07	c 05	N73-32015 *	US-PATENT-CLASS-128-402	c 05	N72-20096 *
US-PATENT-CLASS-126-417	c 44	N80-16452 *	US-PATENT-CLASS-128-2.07	c 52	N74-20728 *	US-PATENT-CLASS-128-402	c 52	N77-14736 *
US-PATENT-CLASS-126-417	c 34	N84-22903 *	US-PATENT-CLASS-128-2.08	c 05	N69-21473 #	US-PATENT-CLASS-128-410	c 52	N77-28717 *
US-PATENT-CLASS-126-418	c 44	N84-28204 *	US-PATENT-CLASS-128-2.08	c 05	N73-32015 *	US-PATENT-CLASS-128-417	c 05	N72-25120 *
US-PATENT-CLASS-126-418	c 44	N86-27706 *	US-PATENT-CLASS-128-2.08	c 52	N74-20728 *	US-PATENT-CLASS-128-417	c 05	N72-27103 *
US-PATENT-CLASS-126-419	c 44	N80-20810 *	US-PATENT-CLASS-128-2.1A	c 09	N72-17153 *	US-PATENT-CLASS-128-418	c 52	N76-29896 *
US-PATENT-CLASS-126-419	c 44	N81-17518 *	US-PATENT-CLASS-128-2.1A	c 09	N72-22202 *	US-PATENT-CLASS-128-418	c 52	N77-14738 *
US-PATENT-CLASS-126-419	c 44	N84-28203 *	US-PATENT-CLASS-128-2.1A	c 52	N74-26625 *	US-PATENT-CLASS-128-419P	c 52	N76-29896 *
US-PATENT-CLASS-126-419	c 44	N85-30474 *	US-PATENT-CLASS-128-2.1A	c 52	N76-14757 *	US-PATENT-CLASS-128-421	c 52	N82-29863 *
US-PATENT-CLASS-126-419	c 44	N86-27706 *	US-PATENT-CLASS-128-2.1A	c 52	N76-29894 *	US-PATENT-CLASS-128-422	c 52	N82-33996 *
US-PATENT-CLASS-126-422	c 44	N82-18686 *	US-PATENT-CLASS-128-2.1A	c 52	N79-18580 *	US-PATENT-CLASS-128-62A	c 52	N82-29862 *
US-PATENT-CLASS-126-423	c 34	N88-23958 *	US-PATENT-CLASS-128-2.1E	c 05	N72-27103 *	US-PATENT-CLASS-128-639	c 52	N79-27836 *
US-PATENT-CLASS-126-425	c 44	N88-14492 *	US-PATENT-CLASS-128-2.1E	c 35	N76-24525 *	US-PATENT-CLASS-128-642	c 52	N80-27072 *
US-PATENT-CLASS-126-429	c 44	N82-18686 *	US-PATENT-CLASS-128-2.1E	c 52	N77-28717 *	US-PATENT-CLASS-128-642	c 52	N81-14612 *
US-PATENT-CLASS-126-430	c 44	N82-18686 *	US-PATENT-CLASS-128-2.1R	c 05	N73-26072 *	US-PATENT-CLASS-128-642	c 52	N81-20703 *
US-PATENT-CLASS-126-434	c 44	N80-20810 *	US-PATENT-CLASS-128-2.1Z	c 35	N76-24525 *	US-PATENT-CLASS-128-660	c 52	N79-26771 *
US-PATENT-CLASS-126-437	c 44	N80-20810 *	US-PATENT-CLASS-128-2.1	c 05	N71-11193 *	US-PATENT-CLASS-128-660	c 52	N83-27578 *
US-PATENT-CLASS-126-438	c 44	N80-14473 *	US-PATENT-CLASS-128-2.1	c 05	N71-12346 *	US-PATENT-CLASS-128-660	c 52	N85-30618 *
US-PATENT-CLASS-126-438	c 44	N82-16475 *	US-PATENT-CLASS-128-2.1	c 05	N71-24729 *	US-PATENT-CLASS-128-661.03	c 52	N90-21519 *
US-PATENT-CLASS-126-438	c 44	N84-28203 *	US-PATENT-CLASS-128-2.1	c 09	N71-26002 *	US-PATENT-CLASS-128-663	c 52	N83-27578 *
US-PATENT-CLASS-126-438	c 44	N84-28204 *	US-PATENT-CLASS-128-2.1	c 05	N72-25120 *	US-PATENT-CLASS-128-665	c 52	N81-27783 *
US-PATENT-CLASS-126-438	c 44	N86-27706 *	US-PATENT-CLASS-128-2F	c 54	N76-14804 *	US-PATENT-CLASS-128-666	c 52	N80-23969 *
US-PATENT-CLASS-126-440	c 44	N84-28204 *	US-PATENT-CLASS-128-2H	c 52	N76-14757 *	US-PATENT-CLASS-128-675	c 35	N90-23706 *
US-PATENT-CLASS-126-442	c 44	N80-14473 *	US-PATENT-CLASS-128-2H	c 52	N76-29894 *	US-PATENT-CLASS-128-686	c 52	N82-11770 *
US-PATENT-CLASS-126-443	c 35	N89-12048 *	US-PATENT-CLASS-128-2H	c 52	N77-10780 *	US-PATENT-CLASS-128-690	c 52	N80-23969 *
US-PATENT-CLASS-126-451	c 44	N84-28203 *	US-PATENT-CLASS-128-2H	c 52	N77-14736 *	US-PATENT-CLASS-128-691	c 52	N82-11770 *
US-PATENT-CLASS-126-900	c 44	N85-30474 *	US-PATENT-CLASS-128-2N	c 05	N72-25122 *	US-PATENT-CLASS-128-6	c 52	N80-16725 *
US-PATENT-CLASS-126-901	c 44	N80-16452 *	US-PATENT-CLASS-128-2N	c 05	N73-13114 *	US-PATENT-CLASS-128-736	c 52	N85-30618 *
US-PATENT-CLASS-126-901	c 44	N83-34449 *	US-PATENT-CLASS-128-2P	c 52	N76-29894 *	US-PATENT-CLASS-128-748	c 52	N80-18691 *
US-PATENT-CLASS-126-901	c 35	N89-12048 *	US-PATENT-CLASS-128-2R	c 09	N72-22202 *	US-PATENT-CLASS-128-748	c 35	N90-23706 *
US-PATENT-CLASS-126-91A	c 25	N79-11151 *	US-PATENT-CLASS-128-2R	c 52	N79-12694 *	US-PATENT-CLASS-128-760	c 52	N80-18690 *
US-PATENT-CLASS-128-2.06E	c 05	N75-24716 *	US-PATENT-CLASS-128-2S	c 52	N74-10975 *	US-PATENT-CLASS-128-760	c 52	N81-29763 *
US-PATENT-CLASS-128-2.07	c 52	N79-21750 *	US-PATENT-CLASS-128-2S	c 52	N74-27864 *	US-PATENT-CLASS-128-761	c 52	N81-24711 *
US-PATENT-CLASS-128-DIG.12	c 37	N77-28487 *	US-PATENT-CLASS-128-2S	c 33	N75-31329 *	US-PATENT-CLASS-128-774	c 52	N80-27072 *
US-PATENT-CLASS-128-DIG.12	c 51	N81-14605 *	US-PATENT-CLASS-128-2S	c 33	N76-19338 *	US-PATENT-CLASS-128-774	c 52	N81-20703 *
US-PATENT-CLASS-128-DIG.13	c 52	N83-27577 *	US-PATENT-CLASS-128-2S	c 52	N76-29895 *	US-PATENT-CLASS-128-774	c 52	N83-25346 *
US-PATENT-CLASS-128-DIG.16	c 51	N81-14605 *	US-PATENT-CLASS-128-2S	c 52	N76-29896 *	US-PATENT-CLASS-128-778	c 52	N82-22875 *
US-PATENT-CLASS-128-DIG.20	c 52	N76-19785 *	US-PATENT-CLASS-128-2V	c 52	N74-20726 *	US-PATENT-CLASS-128-778	c 35	N90-23706 *
US-PATENT-CLASS-128-DIG.20	c 37	N81-17433 *	US-PATENT-CLASS-128-2V	c 35	N75-12271 *	US-PATENT-CLASS-128-782	c 52	N80-27072 *
US-PATENT-CLASS-128-DIG.25	c 52	N81-25660 *	US-PATENT-CLASS-128-2V	c 54	N75-27760 *	US-PATENT-CLASS-128-782	c 39	N83-20280 *
US-PATENT-CLASS-128-DIG.25	c 52	N84-11744 *	US-PATENT-CLASS-128-2V	c 52	N79-14751 *	US-PATENT-CLASS-128-782	c 52	N83-25346 *
US-PATENT-CLASS-128-DIG.26	c 51	N81-14605 *	US-PATENT-CLASS-128-2V	c 52	N79-18580 *	US-PATENT-CLASS-128-784	c 52	N82-33996 *
US-PATENT-CLASS-128-DIG.4	c 05	N72-27103 *	US-PATENT-CLASS-128-202.11	c 54	N86-28618 *	US-PATENT-CLASS-128-80-E	c 54	N86-22112 *
US-PATENT-CLASS-128-DIG.4	c 05	N75-24716 *	US-PATENT-CLASS-128-203	c 54	N76-24900 *	US-PATENT-CLASS-128-80F	c 52	N81-25661 *
US-PATENT-CLASS-128-DIG.4	c 35	N76-24525 *	US-PATENT-CLASS-128-204.18	c 51	N81-14605 *	US-PATENT-CLASS-128-804	c 52	N82-33996 *
US-PATENT-CLASS-128-DIG.4	c 52	N77-28717 *	US-PATENT-CLASS-128-206F	c 14	N73-24473 *	US-PATENT-CLASS-128-89R	c 52	N81-25662 *
US-PATENT-CLASS-128-DIG.6	c 51	N81-14605 *	US-PATENT-CLASS-128-207.14	c 51	N81-14605 *	US-PATENT-CLASS-128-903	c 52	N80-18691 *
US-PATENT-CLASS-128-DIG.9	c 52	N80-16725 *	US-PATENT-CLASS-128-207.28	c 51	N81-14605 *	US-PATENT-CLASS-128-92C	c 27	N78-17215 *
US-PATENT-CLASS-128-DIG.9	c 51	N81-14605 *	US-PATENT-CLASS-128-212	c 54	N80-10799 *	US-PATENT-CLASS-128-92G	c 27	N78-17215 *
US-PATENT-CLASS-128-1.2	c 52	N82-22875 *	US-PATENT-CLASS-128-214D	c 52	N79-14749 *	US-PATENT-CLASS-129-16.7	c 08	N71-15908 *
US-PATENT-CLASS-128-1A	c 05	N73-32012 *	US-PATENT-CLASS-128-214E	c 52	N74-22771 *	US-PATENT-CLASS-13-20	c 11	N72-23215 *
US-PATENT-CLASS-128-1A	c 54	N84-16803 *	US-PATENT-CLASS-128-214F	c 37	N77-28487 *	US-PATENT-CLASS-13-20	c 12	N79-26075 *
US-PATENT-CLASS-128-1R	c 52	N77-25772 *	US-PATENT-CLASS-128-230	c 52	N75-33640 *	US-PATENT-CLASS-13-22	c 12	N79-26075 *
US-PATENT-CLASS-128-1R	c 52	N77-28716 *	US-PATENT-CLASS-128-236	c 51	N81-14605 *	US-PATENT-CLASS-13-24	c 12	N79-26075 *
US-PATENT-CLASS-128-1R	c 52	N81-25660 *	US-PATENT-CLASS-128-24-A	c 52	N84-34913 *	US-PATENT-CLASS-13-26	c 33	N71-15625 *
US-PATENT-CLASS-128-1R	c 52	N84-11744 *	US-PATENT-CLASS-128-24A	c 05	N73-27062 *	US-PATENT-CLASS-13-26	c 14	N71-23267 *
US-PATENT-CLASS-128-142.2	c 54	N76-24900 *	US-PATENT-CLASS-128-24A	c 54	N75-27760 *	US-PATENT-CLASS-13-31	c 11	N72-23215 *

US-PATENT-CLASS-13-31	c 31	N74-27900 *	US-PATENT-CLASS-136-291	c 44	N81-12542 *	US-PATENT-CLASS-137-197	c 35	N78-12390 *
US-PATENT-CLASS-13-35	c 33	N71-24145 *	US-PATENT-CLASS-136-30	c 44	N74-19693 *	US-PATENT-CLASS-137-1	c 12	N70-38997 *
US-PATENT-CLASS-134-137	c 37	N82-12441 *	US-PATENT-CLASS-136-30	c 44	N76-18643 *	US-PATENT-CLASS-137-1	c 15	N73-27406 *
US-PATENT-CLASS-134-166C	c 37	N87-17035 *	US-PATENT-CLASS-136-30	c 44	N76-29699 *	US-PATENT-CLASS-137-207	c 34	N77-30399 *
US-PATENT-CLASS-134-17	c 43	N81-26509 *	US-PATENT-CLASS-136-36	c 44	N74-19692 *	US-PATENT-CLASS-137-209	c 34	N77-30399 *
US-PATENT-CLASS-134-21	c 37	N76-18456 *	US-PATENT-CLASS-136-6LF	c 44	N76-18643 *	US-PATENT-CLASS-137-209	c 20	N80-10278 *
US-PATENT-CLASS-134-37	c 37	N76-18456 *	US-PATENT-CLASS-136-6	c 03	N71-26084 *	US-PATENT-CLASS-137-340	c 15	N70-34817 *
US-PATENT-CLASS-134-93	c 37	N85-21652 *	US-PATENT-CLASS-136-6	c 03	N72-15986 *	US-PATENT-CLASS-137-340	c 15	N70-35087 *
US-PATENT-CLASS-135-1	c 32	N87-17035 *	US-PATENT-CLASS-136-6	c 44	N82-24641 *	US-PATENT-CLASS-137-341	c 12	N71-17661 *
US-PATENT-CLASS-135-903	c 37	N70-36536 *	US-PATENT-CLASS-136-6	c 44	N82-24642 *	US-PATENT-CLASS-137-375	c 37	N80-23654 *
US-PATENT-CLASS-136-100R	c 03	N87-17036 *	US-PATENT-CLASS-136-6	c 44	N82-24643 *	US-PATENT-CLASS-137-397	c 15	N73-26472 *
US-PATENT-CLASS-136-114	c 44	N72-20034 *	US-PATENT-CLASS-136-6	c 44	N82-24644 *	US-PATENT-CLASS-137-469	c 05	N72-20087 *
US-PATENT-CLASS-136-132	c 03	N76-14601 *	US-PATENT-CLASS-136-79	c 03	N72-20032 *	US-PATENT-CLASS-137-484.2	c 34	N78-25351 *
US-PATENT-CLASS-136-132	c 03	N71-11053 *	US-PATENT-CLASS-136-81	c 03	N72-20032 *	US-PATENT-CLASS-137-516.27	c 14	N73-13418 *
US-PATENT-CLASS-136-133	c 15	N71-22974 *	US-PATENT-CLASS-136-83R	c 03	N72-20034 *	US-PATENT-CLASS-137-491	c 15	N69-21924 *
US-PATENT-CLASS-136-133	c 03	N69-24320 *	US-PATENT-CLASS-136-83R	c 44	N76-18641 *	US-PATENT-CLASS-137-493	c 52	N81-25660 *
US-PATENT-CLASS-136-133	c 03	N71-23006 *	US-PATENT-CLASS-136-83	c 03	N71-28579 *	US-PATENT-CLASS-137-495	c 15	N70-38603 *
US-PATENT-CLASS-136-133	c 03	N72-15986 *	US-PATENT-CLASS-136-86A	c 44	N76-27664 *	US-PATENT-CLASS-137-496	c 15	N71-22706 *
US-PATENT-CLASS-136-135	c 03	N72-15986 *	US-PATENT-CLASS-136-86S	c 44	N76-18641 *	US-PATENT-CLASS-137-501	c 34	N78-25351 *
US-PATENT-CLASS-136-143	c 44	N76-29699 *	US-PATENT-CLASS-136-86	c 03	N71-11052 *	US-PATENT-CLASS-137-505.12	c 14	N71-18625 *
US-PATENT-CLASS-136-146	c 03	N69-21337 *	US-PATENT-CLASS-136-86	c 03	N71-20904 *	US-PATENT-CLASS-137-505.12	c 34	N78-25351 *
US-PATENT-CLASS-136-146	c 24	N76-14204 *	US-PATENT-CLASS-136-86	c 15	N71-23022 *	US-PATENT-CLASS-137-505.25	c 37	N78-25426 *
US-PATENT-CLASS-136-148	c 24	N76-14204 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-505.38	c 37	N75-15050 *
US-PATENT-CLASS-136-148	c 44	N82-24645 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-505.42	c 37	N75-15050 *
US-PATENT-CLASS-136-162	c 44	N76-14601 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-515.3	c 37	N76-14463 *
US-PATENT-CLASS-136-166	c 03	N71-23336 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-516.27	c 15	N73-30459 *
US-PATENT-CLASS-136-166	c 03	N72-20032 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-535	c 15	N73-30459 *
US-PATENT-CLASS-136-170	c 03	N71-11051 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-535	c 05	N73-32014 *
US-PATENT-CLASS-136-175	c 03	N72-20034 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-538	c 05	N73-25125 *
US-PATENT-CLASS-136-179	c 03	N70-41864 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-539	c 15	N70-41811 *
US-PATENT-CLASS-136-182	c 03	N71-10728 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-549	c 37	N81-17433 *
US-PATENT-CLASS-136-182	c 03	N71-20407 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-550	c 37	N78-14463 *
US-PATENT-CLASS-136-182	c 03	N71-20491 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-554	c 09	N71-23191 *
US-PATENT-CLASS-136-182	c 44	N74-27519 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-559	c 11	N73-12265 *
US-PATENT-CLASS-136-182	c 44	N76-14601 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-574	c 20	N80-10278 *
US-PATENT-CLASS-136-202	c 09	N72-12136 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-576	c 20	N80-10278 *
US-PATENT-CLASS-136-202	c 03	N72-26031 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-582	c 32	N71-16103 *
US-PATENT-CLASS-136-202	c 44	N76-16612 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-582	c 32	N71-16106 *
US-PATENT-CLASS-136-202	c 35	N77-32454 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-582	c 15	N71-19569 *
US-PATENT-CLASS-136-202	c 35	N79-14346 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-582	c 15	N73-26472 *
US-PATENT-CLASS-136-206	c 03	N72-11062 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-590	c 20	N80-10278 *
US-PATENT-CLASS-136-206	c 09	N72-12136 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-594	c 12	N71-18615 *
US-PATENT-CLASS-136-206	c 44	N76-14595 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-604	c 15	N73-27406 *
US-PATENT-CLASS-136-206	c 44	N76-31666 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-608	c 37	N87-21332 *
US-PATENT-CLASS-136-20	c 44	N74-19693 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-608	c 15	N73-13462 *
US-PATENT-CLASS-136-210	c 44	N76-16612 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-614.06	c 37	N79-11402 *
US-PATENT-CLASS-136-211	c 35	N76-15434 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-614.11	c 37	N87-25573 *
US-PATENT-CLASS-136-212	c 35	N76-15434 *	US-PATENT-CLASS-136-86	c 03	N71-29044 *	US-PATENT-CLASS-137-614.18	c 37	N87-25573 *
US-PATENT-CLASS-136-213	c 14	N69-27459 *	US-PATENT-CLASS-136-86	c 03	N71-11049 *	US-PATENT-CLASS-137-614	c 15	N70-36492 *
US-PATENT-CLASS-136-213	c 34	N74-27861 *	US-PATENT-CLASS-136-86	c 03	N71-11050 *	US-PATENT-CLASS-137-615	c 12	N71-16031 *
US-PATENT-CLASS-136-224	c 14	N73-12447 *	US-PATENT-CLASS-136-86	c 03	N71-11056 *	US-PATENT-CLASS-137-624.11	c 35	N78-19466 *
US-PATENT-CLASS-136-225	c 14	N73-24472 *	US-PATENT-CLASS-136-86	c 03	N71-18698 *	US-PATENT-CLASS-137-624.14	c 03	N69-21469 *
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US-PATENT-CLASS-165-34	c 34	N87-22950 *	US-PATENT-CLASS-175-45	c 35	N84-33768 *	US-PATENT-CLASS-178-6	c 07	N71-26579 *
US-PATENT-CLASS-165-3	c 03	N72-28025 *	US-PATENT-CLASS-175-78	c 46	N80-10709 *	US-PATENT-CLASS-178-6	c 07	N72-12081 *
US-PATENT-CLASS-165-41	c 34	N84-14461 *	US-PATENT-CLASS-176-11	c 24	N72-33681 *	US-PATENT-CLASS-178-6	c 16	N72-13437 *
US-PATENT-CLASS-165-41	c 34	N86-27593 *	US-PATENT-CLASS-176-11	c 25	N76-27383 *	US-PATENT-CLASS-178-6	c 10	N73-13235 *
US-PATENT-CLASS-165-41	c 34	N88-23958 *	US-PATENT-CLASS-176-11	c 25	N76-29379 *	US-PATENT-CLASS-178-6	c 36	N74-20009 *
US-PATENT-CLASS-165-41	c 35	N89-12048 *	US-PATENT-CLASS-176-11	c 25	N78-27226 *	US-PATENT-CLASS-178-7.1	c 07	N71-24612 *
US-PATENT-CLASS-165-41	c 34	N90-20323 *	US-PATENT-CLASS-176-14	c 25	N76-29379 *	US-PATENT-CLASS-178-7.1	c 07	N71-27341 *
US-PATENT-CLASS-165-41	c 27	N90-23541 *	US-PATENT-CLASS-176-169	c 22	N73-32528 *	US-PATENT-CLASS-178-7.1	c 09	N72-17156 *
US-PATENT-CLASS-165-41	c 31	N90-23587 *	US-PATENT-CLASS-176-16	c 25	N76-27383 *	US-PATENT-CLASS-178-7.1	c 32	N74-19790 *
US-PATENT-CLASS-165-44	c 15	N71-26611 *	US-PATENT-CLASS-176-16	c 25	N76-29379 *	US-PATENT-CLASS-178-7.1	c 36	N75-19652 *
US-PATENT-CLASS-165-46	c 05	N71-19439 *	US-PATENT-CLASS-176-16	c 25	N78-27226 *	US-PATENT-CLASS-178-7.2R	c 08	N72-22164 *
US-PATENT-CLASS-165-46	c 05	N71-24147 *	US-PATENT-CLASS-176-22	c 73	N78-28913 *	US-PATENT-CLASS-178-7.2	c 14	N70-41807 *
US-PATENT-CLASS-165-46	c 05	N73-20137 *	US-PATENT-CLASS-176-33	c 73	N78-28913 *	US-PATENT-CLASS-178-7.2	c 71	N74-21014 *
US-PATENT-CLASS-165-46	c 05	N73-26071 *	US-PATENT-CLASS-176-39	c 73	N78-19920 *	US-PATENT-CLASS-178-7.2	c 35	N75-25123 *
US-PATENT-CLASS-165-46	c 54	N82-29002 *	US-PATENT-CLASS-176-39	c 73	N78-28913 *	US-PATENT-CLASS-178-7.3	c 07	N71-27341 *
US-PATENT-CLASS-165-46	c 34	N90-21999 *	US-PATENT-CLASS-176-3	c 75	N75-13625 *	US-PATENT-CLASS-178-7.3	c 07	N72-12081 *
US-PATENT-CLASS-165-47	c 33	N71-29052 *	US-PATENT-CLASS-176-45	c 22	N71-28759 *	US-PATENT-CLASS-178-7.5E	c 10	N73-31273 *
US-PATENT-CLASS-165-47	c 31	N73-30829 *	US-PATENT-CLASS-176-86G	c 22	N72-20597 *	US-PATENT-CLASS-178-7.8	c 36	N74-20009 *
US-PATENT-CLASS-165-47	c 34	N75-12222 *	US-PATENT-CLASS-177-147	c 35	N85-20294 *	US-PATENT-CLASS-178-7.7	c 09	N71-12539 *
US-PATENT-CLASS-165-48R	c 35	N85-28214 *	US-PATENT-CLASS-177-1	c 35	N77-19385 *	US-PATENT-CLASS-178-7.7	c 32	N74-20813 *
US-PATENT-CLASS-165-58	c 27	N83-36220 *	US-PATENT-CLASS-177-200	c 35	N74-26945 *	US-PATENT-CLASS-178-7.89	c 09	N76-24280 *
US-PATENT-CLASS-165-61	c 34	N83-34221 *	US-PATENT-CLASS-177-208	c 35	N77-19385 *	US-PATENT-CLASS-178-7.92	c 14	N72-25414 *
US-PATENT-CLASS-165-61	c 35	N85-28214 *	US-PATENT-CLASS-177-210	c 14	N71-10773 *	US-PATENT-CLASS-178-79	c 32	N75-21488 *
US-PATENT-CLASS-165-61	c 35	N86-20750 *	US-PATENT-CLASS-177-211	c 35	N74-26945 *	US-PATENT-CLASS-178-88	c 07	N71-12392 *
US-PATENT-CLASS-165-61	c 31	N89-12785 *	US-PATENT-CLASS-177-246	c 35	N74-26945 *	US-PATENT-CLASS-178-88	c 33	N74-12887 *
US-PATENT-CLASS-165-64	c 35	N85-28214 *	US-PATENT-CLASS-177-260	c 35	N85-20294 *	US-PATENT-CLASS-178-88	c 32	N74-20809 *
US-PATENT-CLASS-165-65	c 35	N86-20750 *	US-PATENT-CLASS-178-DIG.12	c 07	N72-12081 *	US-PATENT-CLASS-178-88	c 33	N74-27705 *
US-PATENT-CLASS-165-76	c 34	N83-28356 *	US-PATENT-CLASS-178-DIG.12	c 32	N75-21485 *	US-PATENT-CLASS-178-88	c 33	N76-14371 *
US-PATENT-CLASS-165-76	c 37	N86-32736 *	US-PATENT-CLASS-178-DIG.1	c 36	N74-20009 *	US-PATENT-CLASS-178-88	c 32	N76-16249 *
US-PATENT-CLASS-165-78	c 34	N90-21999 *	US-PATENT-CLASS-178-DIG.23	c 33	N75-30431 *	US-PATENT-CLASS-178-88	c 32	N77-10392 *
US-PATENT-CLASS-165-80E	c 34	N83-34221 *	US-PATENT-CLASS-178-DIG.1	c 45	N78-17656 *	US-PATENT-CLASS-178-88	c 32	N77-24331 *
US-PATENT-CLASS-165-81	c 34	N88-29132 *	US-PATENT-CLASS-178-DIG.20	c 18	N76-14186 *	US-PATENT-CLASS-179-1DM	c 71	N78-23753 *
US-PATENT-CLASS-165-81	c 25	N90-11824 *	US-PATENT-CLASS-178-DIG.20	c 23	N72-27728 *	US-PATENT-CLASS-179-1MF	c 71	N78-23753 *
US-PATENT-CLASS-165-83	c 25	N90-11824 *	US-PATENT-CLASS-178-DIG.20	c 35	N75-19613 *	US-PATENT-CLASS-179-1MN	c 32	N79-23310 *
US-PATENT-CLASS-165-86	c 15	N71-26611 *	US-PATENT-CLASS-178-DIG.21	c 16	N72-13437 *	US-PATENT-CLASS-179-1P	c 10	N73-12244 *
US-PATENT-CLASS-165-86	c 33	N71-29046 *	US-PATENT-CLASS-178-DIG.23	c 07	N73-30115 *	US-PATENT-CLASS-179-1R	c 07	N71-33108 *
US-PATENT-CLASS-165-90A	c 35	N89-12048 *	US-PATENT-CLASS-178-DIG.25	c 74	N75-25706 *	US-PATENT-CLASS-179-1SA	c 10	N73-25240 *
US-PATENT-CLASS-165-905	c 34	N88-29133 *	US-PATENT-CLASS-178-DIG.28	c 08	N72-22164 *	US-PATENT-CLASS-179-1SA	c 32	N76-31372 *
US-PATENT-CLASS-165-905	c 34	N90-20323 *	US-PATENT-CLASS-178-DIG.29	c 35	N75-25123 *	US-PATENT-CLASS-179-1SA	c 32	N77-30309 *
US-PATENT-CLASS-165-905	c 27	N90-23541 *	US-PATENT-CLASS-178-DIG.32	c 71	N74-21014 *	US-PATENT-CLASS-179-1SP	c 32	N77-30309 *
US-PATENT-CLASS-165-96	c 33	N70-36847 *	US-PATENT-CLASS-178-DIG.35	c 09	N76-24280 *	US-PATENT-CLASS-179-1VC	c 07	N71-33108 *
US-PATENT-CLASS-165-96	c 33	N71-22890 *	US-PATENT-CLASS-178-DIG.36	c 08	N72-22164 *	US-PATENT-CLASS-179-100.2A	c 21	N73-13844 *
US-PATENT-CLASS-165-96	c 31	N73-30829 *	US-PATENT-CLASS-178-DIG.6	c 10	N73-13235 *	US-PATENT-CLASS-179-100.2A	c 32	N74-27612 *
US-PATENT-CLASS-165-96	c 33	N73-32818 *	US-PATENT-CLASS-178-DIG.8	c 14	N72-25412 *	US-PATENT-CLASS-179-100.2B	c 32	N74-27612 *
US-PATENT-CLASS-165-96	c 34	N78-17337 *	US-PATENT-CLASS-178-DIG.8	c 45	N76-17656 *	US-PATENT-CLASS-179-100.2CH	c 36	N74-13205 *
US-PATENT-CLASS-165-96	c 34	N84-14461 *	US-PATENT-CLASS-178-15	c 33	N75-19517 *	US-PATENT-CLASS-179-100.2CH	c 35	N78-29421 *
US-PATENT-CLASS-165-96	c 31	N89-12785 *	US-PATENT-CLASS-178-18	c 10	N73-32143 *	US-PATENT-CLASS-179-100.2CH	c 35	N79-16246 *
US-PATENT-CLASS-165-96	c 34	N90-21999 *	US-PATENT-CLASS-178-22.16	c 32	N82-31583 *	US-PATENT-CLASS-179-100.2C	c 35	N77-21392 *
US-PATENT-CLASS-166-222	c 43	N81-26509 *	US-PATENT-CLASS-178-22.17	c 32	N82-31583 *	US-PATENT-CLASS-179-100.2K	c 07	N72-21119 *
US-PATENT-CLASS-166-248	c 43	N78-14452 *	US-PATENT-CLASS-178-5.2R	c 09	N71-28618 *	US-PATENT-CLASS-179-100.2MD	c 35	N74-11283 *
US-PATENT-CLASS-166-259	c 43	N78-14452 *	US-PATENT-CLASS-178-5.2R	c 07	N72-17109 *	US-PATENT-CLASS-179-100.2T	c 35	N74-11283 *
US-PATENT-CLASS-166-267	c 25	N82-23282 *	US-PATENT-CLASS-178-5.4	c 07	N72-17109 *	US-PATENT-CLASS-179-100.2	c 09	N69-24329 *
US-PATENT-CLASS-166-303	c 25	N82-23282 *	US-PATENT-CLASS-178-5.8R	c 71	N74-21014 *	US-PATENT-CLASS-179-100.2	c 09	N71-25886 *
US-PATENT-CLASS-166-343	c 18	N90-20126 *	US-PATENT-CLASS-178-50	c 08	N72-18184 *	US-PATENT-CLASS-179-100.2	c 08	N71-27210 *
US-PATENT-CLASS-166-63	c 46	N79-22679 *	US-PATENT-CLASS-178-50	c 08	N72-25208 *	US-PATENT-CLASS-179-100.2	c 08	N71-27255 *
US-PATENT-CLASS-166-77	c 43	N81-26509 *	US-PATENT-CLASS-178-52	c 08	N72-22162 *	US-PATENT-CLASS-179-100.2CA	c 09	N72-11224 *
US-PATENT-CLASS-169-28	c 12	N72-21310 *	US-PATENT-CLASS-178-54CF	c 09	N71-28618 *	US-PATENT-CLASS-179-100.2MD	c 09	N72-11224 *
US-PATENT-CLASS-169-36	c 12	N72-21310 *	US-PATENT-CLASS-178-54PE	c 09	N71-28618 *	US-PATENT-CLASS-179-107R	c 33	N78-10375 *
US-PATENT-CLASS-169-47	c 25	N83-36118 *	US-PATENT-CLASS-178-58A	c 32	N75-21488 *	US-PATENT-CLASS-179-15.55R	c 08	N72-11171 *
US-PATENT-CLASS-169-62	c 31	N81-14137 *	US-PATENT-CLASS-178-58R	c 32	N80-18252 *	US-PATENT-CLASS-179-15.55R	c 08	N72-33172 *
US-PATENT-CLASS-169-70	c 31	N81-14137 *	US-PATENT-CLASS-178-6.5	c 23	N72-27728 *	US-PATENT-CLASS-179-15AN	c 07	N73-16121 *
US-PATENT-CLASS-173-131	c 15	N73-13463 *	US-PATENT-CLASS-178-6.6DD	c 07	N73-30115 *	US-PATENT-CLASS-179-15AT	c 32	N74-30524 *
US-PATENT-CLASS-173-132	c 37	N76-18454 *	US-PATENT-CLASS-178-6.6DD	c 35	N74-11283 *	US-PATENT-CLASS-179-15A	c 08	N72-22162 *
US-PATENT-CLASS-174-DIG.6	c 26	N73-26752 *	US-PATENT-CLASS-178-6.6	c 07	N71-11300 *	US-PATENT-CLASS-179-15A	c 07	N73-26118 *
US-PATENT-CLASS-174-DIG.6	c 26	N73-32571 *	US-PATENT-CLASS-178-6.6	c 07	N71-26102 *	US-PATENT-CLASS-179-15BA	c 60	N77-12721 *
US-PATENT-CLASS-174-DIG.8	c 33	N74-22865 *	US-PATENT-CLASS-178-6.7R	c 35	N74-15831 *	US-PATENT-CLASS-179-15BA	c 32	N80-18252 *
US-PATENT-CLASS-174-106R	c 09	N72-22198 *	US-PATENT-CLASS-178-6.7	c 07	N72-17109 *	US-PATENT-CLASS-179-15BC	c 08	N72-25208 *
US-PATENT-CLASS-174-110.3	c 14	N71-27186 *	US-PATENT-CLASS-178-6.8	c 08	N72-22164 *	US-PATENT-CLASS-179-15BC	c 07	N73-16121 *
US-PATENT-CLASS-174-111	c 33	N74-27683 *	US-PATENT-CLASS-178-6.8	c 14	N72-25412 *	US-PATENT-CLASS-179-15BC	c 32	N74-30523 *
US-PATENT-CLASS-174-115	c 09	N70-38201 *	US-PATENT-CLASS-178-6.8	c 07	N73-30115 *	US-PATENT-CLASS-179-15BC	c 33	N75-26243 *
US-PATENT-CLASS-174-117F	c 09	N72-22198 *	US-PATENT-CLASS-178-6.8	c 33	N75-30431 *	US-PATENT-CLASS-179-15BL	c 08	N72-22162 *
US-PATENT-CLASS-174-126CP	c 26	N73-32571 *	US-PATENT-CLASS-178-6.8	c 45	N76-17656 *	US-PATENT-CLASS-179-15BM	c 07	N73-26118 *
US-PATENT-CLASS-174-142	c 33	N80-18286 *	US-PATENT-CLASS-178-66R	c 32	N75-24981 *	US-PATENT-CLASS-179-15BS	c 10	N71-33407 *
US-PATENT-CLASS-174-145	c 33	N76-16332 *	US-PATENT-CLASS-178-66	c 09	N71-25865 *	US-PATENT-CLASS-179-15BS	c 07	N72-20140 *
US-PATENT-CLASS-174-148	c 33	N76-16332 *	US-PATENT-CLASS-178-66	c 08	N72-18184 *	US-PATENT-CLASS-179-15BS	c 07	N73-30115 *
US-PATENT-CLASS-174-15CA	c 31	N79-17029 *	US-PATENT-CLASS-178-67	c 08	N70-41961 *	US-PATENT-CLASS-179-15BS	c 32	N75-26195 *
US-PATENT-CLASS-174-15C	c 33	N74-27683 *	US-PATENT-CLASS-178-67	c 32	N74-26654 *	US-PATENT-CLASS-179-15BS	c 60	N77-19760 *
US-PATENT-CLASS-174-18	c 09	N69-21542 *	US-PATENT-CLASS-178-69.1	c 32	N78-15323 *	US-PATENT-CLASS-179-15BV	c 07	N72-25172 *
US-PATENT-CLASS-174-28	c 07	N71-27191 *	US-PATENT-CLASS-178-69.4R	c 32	N74-10132 *	US-PATENT-CLASS-179-15BY	c 32	N74-30524 *
US-PATENT-CLASS-174-28	c 33	N74-27683 *	US-PATENT-CLASS-178-69.5R	c 07	N72-20140 *	US-PATENT-CLASS-179-15FD	c 08	N72-25208 *
US-PATENT-CLASS-174-35	c 07	N71-19436 *	US-PATENT-CLASS-178-69.5R	c 32	N75-26195 *	US-PATENT-CLASS-179-15FS	c 07	N73-28012 *
US-PATENT-CLASS-174-36	c 09	N72-22198 *	US-PATENT-CLASS-178-69.5R	c 33	N76-14371 *	US-PATENT-CLASS-179-15	c 07	N69-39978 *
US-PATENT-CLASS-174-52-PE	c 33	N88-23941 *	US-PATENT-CLASS-178-69.5R	c 60	N77-19760 *	US-PATENT-CLASS-179-15	c 07	N71-20814 *
US-PATENT-CLASS-174-52-R	c 33	N88-23941 *	US-PATENT-CLASS-178-69.5	c 07	N71-11281 *	US-PATENT-CLASS-179-15	c 07	N71-24621 *
US-PATENT-CLASS-174-52-S	c 33	N88-23941 *	US-PATENT-CLASS-178-69.5	c 10	N71-19468 *	US-PATENT-CLASS-179-15	c 07	N71-24622 *
US-PATENT-CLASS-174-52S	c 15	N73-14469 *	US-PATENT-CLASS-178-69.5	c 10	N71-25865 *	US-PATENT-CLASS-179-15	c 08	N72-18184 *
US-PATENT-CLASS-174-68.5	c 15	N70-41960 *	US-PATENT-CLASS-178-69.5	c 10	N71-33407 *	US-PATENT-CLASS-179-175.1A	c 14	N73-27379 *
US-PATENT-CLASS-174-69	c 33	N74-22865 *	US-PATENT-CLASS-178-69.5	c 07	N72-25173 *	US-PATENT-CLASS-179-175.1A	c 33	N78-10375 *

US-PATENT-CLASS-179-18BC	c 32	N86-27513 *	US-PATENT-CLASS-188-1	c 14	N71-23092 *	US-PATENT-CLASS-2-2.1	c 54	N78-17678 *
US-PATENT-CLASS-179-18GF	c 33	N82-29538 *	US-PATENT-CLASS-188-1	c 15	N71-26243 *	US-PATENT-CLASS-2-2.1	c 54	N78-18761 *
US-PATENT-CLASS-179-1	c 07	N71-26181 *	US-PATENT-CLASS-188-1	c 15	N71-27146 *	US-PATENT-CLASS-2-201	c 54	N89-29953
US-PATENT-CLASS-179-1	c 31	N71-33160 *	US-PATENT-CLASS-188-1	c 15	N71-27169 *	US-PATENT-CLASS-2-275	c 18	N71-26285 *
US-PATENT-CLASS-179-27CA	c 32	N79-23310 *	US-PATENT-CLASS-188-218-XL	c 37	N88-29181 *	US-PATENT-CLASS-2-6	c 05	N71-26333 *
US-PATENT-CLASS-179-78	c 33	N81-27397 *	US-PATENT-CLASS-188-251-A	c 37	N88-29181 *	US-PATENT-CLASS-2-6	c 54	N78-17680 *
US-PATENT-CLASS-179-84VF	c 32	N79-23310 *	US-PATENT-CLASS-188-266	c 15	N73-25513 *	US-PATENT-CLASS-2-81	c 18	N71-26285 *
US-PATENT-CLASS-179-91R	c 74	N78-14689 *	US-PATENT-CLASS-188-268	c 15	N72-20443 *	US-PATENT-CLASS-2-81	c 05	N73-32012 *
US-PATENT-CLASS-18-26	c 06	N71-22975 *	US-PATENT-CLASS-188-269	c 44	N79-14527 *	US-PATENT-CLASS-2-82	c 54	N74-32546 *
US-PATENT-CLASS-18-39	c 27	N70-34783 *	US-PATENT-CLASS-188-291	c 54	N77-21844 *	US-PATENT-CLASS-200-114	c 33	N79-33393 *
US-PATENT-CLASS-18-6	c 15	N71-26721 *	US-PATENT-CLASS-188-371	c 37	N82-18601 *	US-PATENT-CLASS-200-129	c 33	N75-27249 *
US-PATENT-CLASS-180-105E	c 11	N72-20244 *	US-PATENT-CLASS-188-373	c 37	N88-23982 *	US-PATENT-CLASS-200-152	c 09	N71-19610 *
US-PATENT-CLASS-180-118	c 31	N71-15689 *	US-PATENT-CLASS-188-65.1	c 15	N73-25512 *	US-PATENT-CLASS-200-153S	c 33	N80-18285 *
US-PATENT-CLASS-180-121	c 31	N71-15689 *	US-PATENT-CLASS-188-65.5	c 15	N71-27067 *	US-PATENT-CLASS-200-157	c 08	N86-27288 *
US-PATENT-CLASS-180-125	c 15	N72-17451 *	US-PATENT-CLASS-188-87	c 12	N71-16894 *	US-PATENT-CLASS-200-19	c 09	N70-39915 *
US-PATENT-CLASS-180-127	c 15	N72-17451 *	US-PATENT-CLASS-188-88	c 15	N71-26611 *	US-PATENT-CLASS-200-304	c 33	N80-18285 *
US-PATENT-CLASS-180-168	c 35	N84-33769 *	US-PATENT-CLASS-189-36	c 15	N70-36947 *	US-PATENT-CLASS-200-39	c 03	N70-38713 *
US-PATENT-CLASS-180-19.2	c 85	N87-21755 *	US-PATENT-CLASS-19-205	c 37	N76-18456 *	US-PATENT-CLASS-200-46	c 74	N79-12890 *
US-PATENT-CLASS-180-305	c 85	N87-21755 *	US-PATENT-CLASS-191-12.2-R	c 33	N86-20669 *	US-PATENT-CLASS-200-61.05	c 25	N86-27431 *
US-PATENT-CLASS-180-41	c 11	N73-26238 *	US-PATENT-CLASS-192-43.1	c 15	N71-17805 *	US-PATENT-CLASS-200-61.42	c 09	N71-12518 *
US-PATENT-CLASS-180-6.5	c 11	N73-26238 *	US-PATENT-CLASS-192-46	c 37	N87-17037 *	US-PATENT-CLASS-200-61.45	c 14	N70-41812 *
US-PATENT-CLASS-180-6.5	c 11	N73-26238 *	US-PATENT-CLASS-192-67R	c 37	N87-17037 *	US-PATENT-CLASS-200-61	c 74	N79-12890 *
US-PATENT-CLASS-180-7R	c 11	N73-26238 *	US-PATENT-CLASS-194-82.26	c 37	N70-21390 *	US-PATENT-CLASS-200-84	c 15	N72-17455 *
US-PATENT-CLASS-180-79.3	c 37	N74-18125 *	US-PATENT-CLASS-194-82.29	c 37	N80-21390 *	US-PATENT-CLASS-200-6	c 10	N71-15909 *
US-PATENT-CLASS-180-8.6	c 18	N88-23828 *	US-PATENT-CLASS-194-902	c 37	N89-13785 *	US-PATENT-CLASS-200-6	c 09	N71-16089 *
US-PATENT-CLASS-180-8A	c 11	N73-26238 *	US-PATENT-CLASS-195-1.8	c 51	N77-25769 *	US-PATENT-CLASS-200-81.9M	c 09	N72-20189 *
US-PATENT-CLASS-180-9.2R	c 11	N73-26238 *	US-PATENT-CLASS-195-1.8	c 51	N79-10694 *	US-PATENT-CLASS-200-81R	c 09	N72-22204 *
US-PATENT-CLASS-180-9.5	c 11	N73-26238 *	US-PATENT-CLASS-195-1.8	c 52	N79-14749 *	US-PATENT-CLASS-200-82C	c 09	N72-22204 *
US-PATENT-CLASS-181.5R	c 71	N74-31148 *	US-PATENT-CLASS-195-103.5K	c 51	N77-22794 *	US-PATENT-CLASS-200-82	c 10	N71-23663 *
US-PATENT-CLASS-181-5	c 11	N71-28779 *	US-PATENT-CLASS-195-103.5K	c 52	N79-14750 *	US-PATENT-CLASS-200-83N	c 35	N75-15931 *
US-PATENT-CLASS-181-0.5	c 71	N85-30785 *	US-PATENT-CLASS-195-103.5L	c 52	N79-14750 *	US-PATENT-CLASS-200-83	c 33	N79-33392 *
US-PATENT-CLASS-181-0.5	c 71	N88-24241 *	US-PATENT-CLASS-195-103.5R	c 06	N72-25149 *	US-PATENT-CLASS-201-10	c 27	N81-17261 *
US-PATENT-CLASS-181-0.5	c 31	N90-21215 *	US-PATENT-CLASS-195-103.5R	c 25	N75-12086 *	US-PATENT-CLASS-201-17	c 44	N78-31527 *
US-PATENT-CLASS-181-102	c 39	N80-10507 *	US-PATENT-CLASS-195-103.5R	c 35	N75-27330 *	US-PATENT-CLASS-201-17	c 25	N81-33246 *
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US-PATENT-CLASS-204-276	c 25	N82-12166 *	US-PATENT-CLASS-210-108	c 34	N78-24285 *	US-PATENT-CLASS-214-1	c 32	N70-41387 *
US-PATENT-CLASS-204-278	c 25	N82-12166 *	US-PATENT-CLASS-210-110	c 05	N72-27102 *	US-PATENT-CLASS-214-90R	c 03	N72-25021 *
US-PATENT-CLASS-204-278	c 25	N84-12262 *	US-PATENT-CLASS-210-137	c 05	N72-27102 *	US-PATENT-CLASS-215-247	c 33	N76-19339 *
US-PATENT-CLASS-204-278	c 44	N84-23019 *	US-PATENT-CLASS-210-142	c 34	N79-24285 *	US-PATENT-CLASS-219-10.41	c 33	N82-26571 *
US-PATENT-CLASS-204-279	c 33	N75-27252 *	US-PATENT-CLASS-210-151	c 45	N84-12654 *	US-PATENT-CLASS-219-10.43	c 31	N85-29083 *
US-PATENT-CLASS-204-280R	c 25	N83-13187 *	US-PATENT-CLASS-210-186	c 37	N80-10494 *	US-PATENT-CLASS-219-10.49R	c 33	N81-19389 *
US-PATENT-CLASS-204-280	c 44	N84-23019 *	US-PATENT-CLASS-210-188	c 12	N72-25292 *	US-PATENT-CLASS-219-10.49	c 11	N71-15925 *
US-PATENT-CLASS-204-286	c 33	N75-27252 *	US-PATENT-CLASS-210-192	c 54	N78-14784 *	US-PATENT-CLASS-219-10.49	c 31	N85-29083 *
US-PATENT-CLASS-204-290F	c 28	N81-24280 *	US-PATENT-CLASS-210-205	c 29	N90-21209 *	US-PATENT-CLASS-219-10.53	c 33	N82-26571 *
US-PATENT-CLASS-204-290F	c 44	N82-29710 *	US-PATENT-CLASS-210-212	c 03	N72-20033 *	US-PATENT-CLASS-219-10.53	c 31	N85-29083 *
US-PATENT-CLASS-204-290R	c 33	N75-27252 *	US-PATENT-CLASS-210-222	c 35	N78-12390 *	US-PATENT-CLASS-219-10.67	c 33	N81-19389 *
US-PATENT-CLASS-204-290R	c 28	N81-24280 *	US-PATENT-CLASS-210-222	c 52	N80-14687 *	US-PATENT-CLASS-219-10.77	c 31	N85-29083 *
US-PATENT-CLASS-204-290R	c 44	N82-29710 *	US-PATENT-CLASS-210-23F	c 51	N79-10693 *	US-PATENT-CLASS-219-101	c 15	N73-14468 *
US-PATENT-CLASS-204-290R	c 25	N84-12262 *	US-PATENT-CLASS-210-23H	c 27	N80-23452 *	US-PATENT-CLASS-219-101	c 37	N74-11300 *
US-PATENT-CLASS-204-290	c 44	N84-28205 *	US-PATENT-CLASS-210-234	c 34	N75-33342 *	US-PATENT-CLASS-219-107	c 15	N73-28515 *
US-PATENT-CLASS-204-291	c 28	N81-24280 *	US-PATENT-CLASS-210-24R	c 27	N81-14076 *	US-PATENT-CLASS-219-107	c 37	N74-11300 *
US-PATENT-CLASS-204-292	c 25	N78-10225 *	US-PATENT-CLASS-210-247	c 29	N90-21209 *	US-PATENT-CLASS-219-109	c 15	N72-23497 *
US-PATENT-CLASS-204-298	c 15	N70-34967 *	US-PATENT-CLASS-210-24	c 27	N77-30236 *	US-PATENT-CLASS-219-117	c 15	N73-32358 *
US-PATENT-CLASS-204-298	c 09	N71-26701 *	US-PATENT-CLASS-210-24	c 25	N81-18244 *	US-PATENT-CLASS-219-118	c 37	N76-27568 *
US-PATENT-CLASS-204-298	c 15	N72-32487 *	US-PATENT-CLASS-210-257.1	c 29	N90-21209 *	US-PATENT-CLASS-219-118	c 37	N77-11397 *
US-PATENT-CLASS-204-298	c 37	N75-19684 *	US-PATENT-CLASS-210-259	c 34	N75-33342 *	US-PATENT-CLASS-219-119	c 15	N73-14468 *
US-PATENT-CLASS-204-298	c 27	N86-32569 *	US-PATENT-CLASS-210-282	c 37	N87-17035 *	US-PATENT-CLASS-219-121.28	c 35	N90-20351 *
US-PATENT-CLASS-204-298	c 31	N86-32567 *	US-PATENT-CLASS-210-28	c 85	N79-17747 *	US-PATENT-CLASS-219-121.54	c 37	N88-30131 *
US-PATENT-CLASS-204-298	c 31	N87-21160 *	US-PATENT-CLASS-210-304	c 34	N75-33342 *	US-PATENT-CLASS-219-121.56	c 37	N88-30131 *
US-PATENT-CLASS-204-299-R	c 25	N88-23845 *	US-PATENT-CLASS-210-314	c 28	N70-41447 *	US-PATENT-CLASS-219-121.57	c 37	N88-30131 *
US-PATENT-CLASS-204-299R	c 25	N78-14104 *	US-PATENT-CLASS-210-321.1	c 25	N82-21269 *	US-PATENT-CLASS-219-121LE	c 26	N86-32551 *
US-PATENT-CLASS-204-299R	c 25	N79-14169 *	US-PATENT-CLASS-210-321.6	c 29	N90-21209 *	US-PATENT-CLASS-219-121LN	c 44	N82-26777 *
US-PATENT-CLASS-204-299R	c 37	N80-14397 *	US-PATENT-CLASS-210-321B	c 52	N80-14687 *	US-PATENT-CLASS-219-121LY	c 26	N86-32551 *
US-PATENT-CLASS-204-299R	c 51	N80-16715 *	US-PATENT-CLASS-210-333	c 34	N75-33342 *	US-PATENT-CLASS-219-121P	c 15	N72-32487 *
US-PATENT-CLASS-204-299R	c 25	N83-10126 *	US-PATENT-CLASS-210-340	c 34	N75-33342 *	US-PATENT-CLASS-219-121	c 15	N69-21471 *
US-PATENT-CLASS-204-299R	c 25	N83-13187 *	US-PATENT-CLASS-210-340	c 37	N80-10494 *	US-PATENT-CLASS-219-121	c 33	N70-34540 *
US-PATENT-CLASS-204-299	c 34	N74-27744 *	US-PATENT-CLASS-210-340	c 29	N90-21209 *	US-PATENT-CLASS-219-121	c 15	N71-19486 *
US-PATENT-CLASS-204-299	c 25	N79-10163 *	US-PATENT-CLASS-210-355	c 51	N90-17252 *	US-PATENT-CLASS-219-121	c 16	N71-20400 *
US-PATENT-CLASS-204-301	c 54	N78-14784 *	US-PATENT-CLASS-210-40	c 27	N77-31308 *	US-PATENT-CLASS-219-121	c 15	N71-27135 *
US-PATENT-CLASS-204-305	c 03	N71-24718 *	US-PATENT-CLASS-210-40	c 85	N78-17747 *	US-PATENT-CLASS-219-124.02	c 37	N88-30131 *
US-PATENT-CLASS-204-30	c 09	N71-28691 *	US-PATENT-CLASS-210-40	c 45	N82-11634 *	US-PATENT-CLASS-219-124.2	c 37	N79-10421 *
US-PATENT-CLASS-204-32A	c 33	N77-26385 *	US-PATENT-CLASS-210-411	c 34	N75-33342 *	US-PATENT-CLASS-219-124.32	c 37	N79-10421 *
US-PATENT-CLASS-204-32R	c 44	N76-14595 *	US-PATENT-CLASS-210-414	c 51	N90-17252 *	US-PATENT-CLASS-219-124.34	c 37	N88-21850 *

## US-PATENT-CLASS-219-124.34

US-PATENT-CLASS-219-124.34 .. c 74 N87-17493 \*  
US-PATENT-CLASS-219-124.34 .. c 74 N87-25843 \*  
US-PATENT-CLASS-219-124.34 .. c 37 N88-14362 \*  
US-PATENT-CLASS-219-125.1 .. c 37 N79-10421 \*  
US-PATENT-CLASS-219-125 .. c 15 N71-23815 \*  
US-PATENT-CLASS-219-125 .. c 37 N75-27376 \*  
US-PATENT-CLASS-219-130.01 .. c 74 N87-17493 \*  
US-PATENT-CLASS-219-130.01 .. c 74 N87-25843 \*  
US-PATENT-CLASS-219-130.01 .. c 37 N88-14362 \*  
US-PATENT-CLASS-219-130.4 .. c 37 N88-30131 \*  
US-PATENT-CLASS-219-130 .. c 15 N71-23798 \*  
US-PATENT-CLASS-219-131 .. c 15 N71-15871 \*  
US-PATENT-CLASS-219-136 .. c 37 N88-14362 \*  
US-PATENT-CLASS-219-136 .. c 31 N90-23586 \*  
US-PATENT-CLASS-219-136 .. c 31 N90-26168 \*  
US-PATENT-CLASS-219-137.42 .. c 37 N88-23980 \*  
US-PATENT-CLASS-219-137 .. c 15 N70-34814 \*  
US-PATENT-CLASS-219-137 .. c 37 N75-19683 \*  
US-PATENT-CLASS-219-158 .. c 15 N72-22491 \*  
US-PATENT-CLASS-219-160 .. c 37 N80-23655 \*  
US-PATENT-CLASS-219-161 .. c 37 N80-23655 \*  
US-PATENT-CLASS-219-19 .. c 33 N70-34812 \*  
US-PATENT-CLASS-219-201 .. c 52 N80-16725 \*  
US-PATENT-CLASS-219-201 .. c 37 N85-29286 \*  
US-PATENT-CLASS-219-203 .. c 11 N73-12265 \*  
US-PATENT-CLASS-219-203 .. c 27 N84-33589 \*  
US-PATENT-CLASS-219-209 .. c 35 N81-26431 \*  
US-PATENT-CLASS-219-210 .. c 35 N81-26431 \*  
US-PATENT-CLASS-219-216 .. c 35 N74-15831 \*  
US-PATENT-CLASS-219-219 .. c 27 N84-33589 \*  
US-PATENT-CLASS-219-221 .. c 15 N72-11392 \*  
US-PATENT-CLASS-219-221 .. c 37 N85-29286 \*  
US-PATENT-CLASS-219-229 .. c 15 N71-27214 \*  
US-PATENT-CLASS-219-234 .. c 15 N72-22491 \*  
US-PATENT-CLASS-219-234 .. c 15 N72-23497 \*  
US-PATENT-CLASS-219-243 .. c 15 N72-11392 \*  
US-PATENT-CLASS-219-273 .. c 15 N72-32487 \*  
US-PATENT-CLASS-219-275 .. c 15 N71-20395 \*  
US-PATENT-CLASS-219-275 .. c 20 N87-16875 \*  
US-PATENT-CLASS-219-285 .. c 37 N85-29286 \*  
US-PATENT-CLASS-219-299 .. c 51 N79-10694 \*  
US-PATENT-CLASS-219-300 .. c 37 N77-13418 \*  
US-PATENT-CLASS-219-302 .. c 51 N79-10694 \*  
US-PATENT-CLASS-219-304 .. c 37 N77-13418 \*  
US-PATENT-CLASS-219-343 .. c 27 N83-36220 \*  
US-PATENT-CLASS-219-347 .. c 15 N69-27871 \* #  
US-PATENT-CLASS-219-347 .. c 33 N70-34545 \*  
US-PATENT-CLASS-219-348 .. c 15 N73-27405 \*  
US-PATENT-CLASS-219-34 .. c 09 N70-33312 \*  
US-PATENT-CLASS-219-354 .. c 27 N83-36220 \*  
US-PATENT-CLASS-219-364 .. c 33 N71-16278 \*  
US-PATENT-CLASS-219-378 .. c 33 N71-25353 \*  
US-PATENT-CLASS-219-383 .. c 09 N88-28939 \*  
US-PATENT-CLASS-219-388 .. c 35 N74-15831 \*  
US-PATENT-CLASS-219-390 .. c 27 N83-36220 \*  
US-PATENT-CLASS-219-390 .. c 35 N86-20750 \*  
US-PATENT-CLASS-219-395 .. c 35 N86-20750 \*  
US-PATENT-CLASS-219-396 .. c 35 N86-20750 \*  
US-PATENT-CLASS-219-410 .. c 12 N79-26075 \*  
US-PATENT-CLASS-219-411 .. c 17 N69-25147 \* #  
US-PATENT-CLASS-219-411 .. c 27 N83-36220 \*  
US-PATENT-CLASS-219-413 .. c 14 N71-28958 \*  
US-PATENT-CLASS-219-477 .. c 33 N74-14935 \*  
US-PATENT-CLASS-219-497 .. c 77 N75-20140 \*  
US-PATENT-CLASS-219-499 .. c 14 N75-26430 \*  
US-PATENT-CLASS-219-501 .. c 77 N75-20140 \*  
US-PATENT-CLASS-219-505 .. c 14 N71-27058 \*  
US-PATENT-CLASS-219-505 .. c 77 N75-20140 \*  
US-PATENT-CLASS-219-50 .. c 14 N73-26430 \*  
US-PATENT-CLASS-219-510 .. c 35 N81-26431 \*  
US-PATENT-CLASS-219-522 .. c 11 N73-12265 \*  
US-PATENT-CLASS-219-522 .. c 52 N80-16725 \*  
US-PATENT-CLASS-219-522 .. c 27 N84-33589 \*  
US-PATENT-CLASS-219-530 .. c 33 N71-25353 \*  
US-PATENT-CLASS-219-539 .. c 33 N74-14935 \*  
US-PATENT-CLASS-219-541 .. c 27 N84-33589 \*  
US-PATENT-CLASS-219-543 .. c 27 N84-33589 \*  
US-PATENT-CLASS-219-545 .. c 33 N82-26571 \*  
US-PATENT-CLASS-219-62 .. c 15 N73-28515 \*  
US-PATENT-CLASS-219-72 .. c 15 N71-14932 \*  
US-PATENT-CLASS-219-72 .. c 37 N90-19602 \*  
US-PATENT-CLASS-219-74 .. c 74 N87-25843 \*  
US-PATENT-CLASS-219-74 .. c 37 N90-19602 \*  
US-PATENT-CLASS-219-75 .. c 37 N88-23980 \*  
US-PATENT-CLASS-219-75 .. c 31 N90-23586 \*  
US-PATENT-CLASS-219-75 .. c 31 N90-26168 \*  
US-PATENT-CLASS-219-76.14 .. c 24 N85-30027 \*  
US-PATENT-CLASS-219-78 .. c 37 N74-11300 \*  
US-PATENT-CLASS-219-85CA .. c 35 N80-20560 \*  
US-PATENT-CLASS-219-85CM .. c 35 N80-20560 \*  
US-PATENT-CLASS-219-85R .. c 35 N80-20560 \*  
US-PATENT-CLASS-219-85 .. c 15 N72-22491 \*  
US-PATENT-CLASS-219-85 .. c 15 N72-23497 \*  
US-PATENT-CLASS-219-91 .. c 15 N71-18613 \*  
US-PATENT-CLASS-219-91 .. c 15 N73-32358 \*  
US-PATENT-CLASS-219-92 .. c 37 N76-27568 \*

US-PATENT-CLASS-219-92 .. c 37 N77-11397 \*  
US-PATENT-CLASS-22-200 .. c 15 N71-15966 \*  
US-PATENT-CLASS-22-203 .. c 17 N70-38198 \*  
US-PATENT-CLASS-220-14 .. c 15 N69-39935 \* #  
US-PATENT-CLASS-220-15 .. c 31 N71-15664 \*  
US-PATENT-CLASS-220-15 .. c 34 N75-12222 \*  
US-PATENT-CLASS-220-1 .. c 31 N71-17680 \*  
US-PATENT-CLASS-220-2.2 .. c 24 N79-25143 \*  
US-PATENT-CLASS-220-266 .. c 37 N79-22474 \*  
US-PATENT-CLASS-220-306 .. c 27 N84-27886 \*  
US-PATENT-CLASS-220-335 .. c 45 N83-25217 \*  
US-PATENT-CLASS-220-378 .. c 37 N82-24490 \*  
US-PATENT-CLASS-220-423 .. c 37 N80-18393 \*  
US-PATENT-CLASS-220-429 .. c 44 N80-20808 \*  
US-PATENT-CLASS-220-445 .. c 37 N80-18393 \*  
US-PATENT-CLASS-220-46 .. c 15 N71-27068 \*  
US-PATENT-CLASS-220-5A .. c 31 N89-29578 \*  
US-PATENT-CLASS-220-5R .. c 15 N72-22486 \*  
US-PATENT-CLASS-220-55 .. c 15 N69-27502 \* #  
US-PATENT-CLASS-220-63 .. c 11 N70-38182 \*  
US-PATENT-CLASS-220-67 .. c 15 N71-10577 \*  
US-PATENT-CLASS-220-82R .. c 31 N81-19343 \*  
US-PATENT-CLASS-220-89A .. c 31 N81-19343 \*  
US-PATENT-CLASS-220-89 .. c 11 N71-15960 \*  
US-PATENT-CLASS-220-89 .. c 11 N71-17600 \*  
US-PATENT-CLASS-220-901 .. c 37 N80-18393 \*  
US-PATENT-CLASS-220-901 .. c 31 N89-29578 \*  
US-PATENT-CLASS-220-9 .. c 23 N71-22881 \*  
US-PATENT-CLASS-220-9 .. c 18 N71-23658 \*  
US-PATENT-CLASS-220-9 .. c 15 N71-23816 \*  
US-PATENT-CLASS-220-9 .. c 33 N71-25351 \*  
US-PATENT-CLASS-221-265 .. c 51 N74-15778 \*  
US-PATENT-CLASS-222-131 .. c 31 N79-21225 \*  
US-PATENT-CLASS-222-135 .. c 15 N72-21465 \*  
US-PATENT-CLASS-222-137 .. c 14 N71-27005 \*  
US-PATENT-CLASS-222-145 .. c 37 N76-19436 \*  
US-PATENT-CLASS-222-187 .. c 31 N90-23587 \*  
US-PATENT-CLASS-222-193 .. c 37 N74-13178 \*  
US-PATENT-CLASS-222-309 .. c 15 N72-21465 \*  
US-PATENT-CLASS-222-309 .. c 54 N74-12779 \*  
US-PATENT-CLASS-222-309 .. c 35 N85-21595 \*  
US-PATENT-CLASS-222-324 .. c 54 N74-17853 \*  
US-PATENT-CLASS-222-340 .. c 54 N74-12779 \*  
US-PATENT-CLASS-222-340 .. c 35 N85-21595 \*  
US-PATENT-CLASS-222-387 .. c 54 N74-12779 \*  
US-PATENT-CLASS-222-389 .. c 15 N70-38996 \*  
US-PATENT-CLASS-222-414 .. c 14 N73-27378 \*  
US-PATENT-CLASS-222-43 .. c 35 N85-21595 \*  
US-PATENT-CLASS-222-45 .. c 14 N70-40233 \*  
US-PATENT-CLASS-222-49 .. c 35 N85-21595 \*  
US-PATENT-CLASS-222-514 .. c 54 N74-12779 \*  
US-PATENT-CLASS-222-61 .. c 27 N71-29155 \*  
US-PATENT-CLASS-222-61 .. c 37 N77-28487 \*  
US-PATENT-CLASS-222-71 .. c 15 N72-21465 \*  
US-PATENT-CLASS-222-95 .. c 37 N77-28487 \*  
US-PATENT-CLASS-224-25A .. c 05 N72-23085 \*  
US-PATENT-CLASS-224-25 .. c 05 N71-12351 \*  
US-PATENT-CLASS-224-444 .. c 54 N74-17853 \*  
US-PATENT-CLASS-225-103 .. c 37 N82-32730 \*  
US-PATENT-CLASS-225-1 .. c 15 N71-17628 \*  
US-PATENT-CLASS-225-2 .. c 26 N71-14354 \*  
US-PATENT-CLASS-226-190 .. c 08 N71-19420 \*  
US-PATENT-CLASS-226-58 .. c 14 N71-28935 \*  
US-PATENT-CLASS-227-27 .. c 37 N86-25790 \*  
US-PATENT-CLASS-227-28 .. c 37 N86-25790 \*  
US-PATENT-CLASS-228-103 .. c 35 N83-35338 \*  
US-PATENT-CLASS-228-107 .. c 37 N79-13364 \*  
US-PATENT-CLASS-228-107 .. c 37 N88-14359 \*  
US-PATENT-CLASS-228-109 .. c 37 N88-14359 \*  
US-PATENT-CLASS-228-116 .. c 37 N81-19455 \*  
US-PATENT-CLASS-228-118 .. c 24 N81-17170 \*  
US-PATENT-CLASS-228-118 .. c 24 N81-26179 \*  
US-PATENT-CLASS-228-119 .. c 37 N86-32736 \* #  
US-PATENT-CLASS-228-124 .. c 26 N77-29260 \*  
US-PATENT-CLASS-228-124 .. c 37 N87-21334 \*  
US-PATENT-CLASS-228-13 .. c 18 N79-11108 \*  
US-PATENT-CLASS-228-15.1 .. c 18 N79-11108 \*  
US-PATENT-CLASS-228-157 .. c 24 N82-24296 \*  
US-PATENT-CLASS-228-157 .. c 24 N84-11214 \*  
US-PATENT-CLASS-228-165 .. c 35 N84-22930 \*  
US-PATENT-CLASS-228-170 .. c 24 N81-17170 \*  
US-PATENT-CLASS-228-173 .. c 18 N79-11108 \*  
US-PATENT-CLASS-228-174 .. c 24 N81-17170 \*  
US-PATENT-CLASS-228-181 .. c 24 N84-11214 \*  
US-PATENT-CLASS-228-190 .. c 24 N75-28135 \*  
US-PATENT-CLASS-228-190 .. c 26 N77-28265 \*  
US-PATENT-CLASS-228-190 .. c 24 N81-17170 \*  
US-PATENT-CLASS-228-190 .. c 24 N81-26179 \*  
US-PATENT-CLASS-228-193 .. c 24 N75-28135 \*  
US-PATENT-CLASS-228-193 .. c 37 N76-18455 \*  
US-PATENT-CLASS-228-193 .. c 35 N83-35338 \*  
US-PATENT-CLASS-228-194 .. c 26 N77-28265 \*  
US-PATENT-CLASS-228-1 .. c 37 N75-25185 \*  
US-PATENT-CLASS-228-2.5 .. c 37 N79-13364 \*  
US-PATENT-CLASS-228-2.5 .. c 37 N88-14359 \*

US-PATENT-CLASS-228-205 .. c 37 N81-19455 \*  
US-PATENT-CLASS-228-206 .. c 37 N76-18455 \*  
US-PATENT-CLASS-228-208 .. c 37 N87-21334 \*  
US-PATENT-CLASS-228-209 .. c 37 N87-21334 \*  
US-PATENT-CLASS-228-212 .. c 37 N80-23655 \*  
US-PATENT-CLASS-228-212 .. c 24 N84-11214 \*  
US-PATENT-CLASS-228-214 .. c 37 N76-18455 \*  
US-PATENT-CLASS-228-222 .. c 37 N80-23655 \*  
US-PATENT-CLASS-228-232 .. c 26 N77-28265 \*  
US-PATENT-CLASS-228-238 .. c 37 N76-18455 \*  
US-PATENT-CLASS-228-263.18 .. c 35 N83-35338 \*  
US-PATENT-CLASS-228-263 .. c 26 N77-29260 \*  
US-PATENT-CLASS-228-44.1R .. c 37 N80-23655 \*  
US-PATENT-CLASS-228-5.1 .. c 44 N79-24431 \*  
US-PATENT-CLASS-228-50 .. c 15 N70-39924 \*  
US-PATENT-CLASS-228-50 .. c 15 N70-40204 \*  
US-PATENT-CLASS-228-53 .. c 15 N71-27214 \*  
US-PATENT-CLASS-228-57 .. c 15 N72-22491 \*  
US-PATENT-CLASS-228-6 .. c 44 N79-24431 \*  
US-PATENT-CLASS-228-7 .. c 15 N71-15607 \*  
US-PATENT-CLASS-228-8 .. c 15 N71-23050 \*  
US-PATENT-CLASS-228-8 .. c 37 N79-10421 \*  
US-PATENT-CLASS-228-9 .. c 15 N71-20393 \*  
US-PATENT-CLASS-229-DIG.11 .. c 32 N73-13921 \*  
US-PATENT-CLASS-23-109 .. c 04 N72-33072 \*  
US-PATENT-CLASS-23-201 .. c 06 N72-17095 \*  
US-PATENT-CLASS-23-208 .. c 15 N69-21922 \* #  
US-PATENT-CLASS-23-208 .. c 26 N70-36805 \*  
US-PATENT-CLASS-23-209.1 .. c 15 N72-20446 \*  
US-PATENT-CLASS-23-230B .. c 25 N75-14844 \*  
US-PATENT-CLASS-23-230B .. c 23 N77-17161 \*  
US-PATENT-CLASS-23-230B .. c 25 N79-14169 \*  
US-PATENT-CLASS-23-230B .. c 51 N80-27067 \*  
US-PATENT-CLASS-23-230L .. c 35 N74-32879 \*  
US-PATENT-CLASS-23-230M .. c 25 N76-18245 \*  
US-PATENT-CLASS-23-230M .. c 23 N77-17161 \*  
US-PATENT-CLASS-23-230PC .. c 25 N82-12166 \*  
US-PATENT-CLASS-23-230PC .. c 06 N72-17094 \*  
US-PATENT-CLASS-23-230R .. c 17 N73-12547 \*  
US-PATENT-CLASS-23-230R .. c 17 N73-27446 \*  
US-PATENT-CLASS-23-230R .. c 25 N76-18245 \*  
US-PATENT-CLASS-23-230R .. c 45 N76-31714 \*  
US-PATENT-CLASS-23-230R .. c 23 N77-17161 \*  
US-PATENT-CLASS-23-230 .. c 06 N71-23527 \*  
US-PATENT-CLASS-23-230 .. c 06 N72-17095 \*  
US-PATENT-CLASS-23-231 .. c 23 N77-17161 \*  
US-PATENT-CLASS-23-232C .. c 06 N72-17094 \*  
US-PATENT-CLASS-23-232C .. c 25 N76-18245 \*  
US-PATENT-CLASS-23-232C .. c 23 N77-17161 \*  
US-PATENT-CLASS-23-232E .. c 06 N73-16106 \*  
US-PATENT-CLASS-23-232E .. c 45 N76-31714 \*  
US-PATENT-CLASS-23-232E .. c 25 N78-15210 \*  
US-PATENT-CLASS-23-232E .. c 25 N82-12166 \*  
US-PATENT-CLASS-23-232R .. c 06 N73-16106 \*  
US-PATENT-CLASS-23-232R .. c 45 N76-31714 \*  
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US-PATENT-CLASS-23-232R .. c 25 N78-15210 \*  
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US-PATENT-CLASS-368-201	c 33	N83-36357 *	US-PATENT-CLASS-375-114	c 60	N82-16747 *	US-PATENT-CLASS-403-317	c 37	N85-21649 *
US-PATENT-CLASS-368-47	c 33	N81-14221 *	US-PATENT-CLASS-375-115	c 32	N81-15179 *	US-PATENT-CLASS-403-322	c 18	N84-22605 *
US-PATENT-CLASS-37N	c 27	N81-15104 *	US-PATENT-CLASS-375-116	c 60	N82-16747 *	US-PATENT-CLASS-403-322	c 37	N85-30334 *
US-PATENT-CLASS-370-100	c 60	N82-16747 *	US-PATENT-CLASS-375-120	c 32	N84-27952 *	US-PATENT-CLASS-403-322	c 37	N85-30336 *
US-PATENT-CLASS-370-16	c 62	N90-19776 *	US-PATENT-CLASS-375-120	c 32	N87-21207 *	US-PATENT-CLASS-403-322	c 37	N90-17154 *
US-PATENT-CLASS-370-58	c 60	N81-27814 *	US-PATENT-CLASS-375-120	c 33	N87-25531 *	US-PATENT-CLASS-403-325	c 37	N90-17154 *
US-PATENT-CLASS-370-67	c 33	N82-29538 *	US-PATENT-CLASS-375-1	c 32	N81-15179 *	US-PATENT-CLASS-403-328	c 18	N86-20469 *
US-PATENT-CLASS-370-85	c 33	N81-14221 *	US-PATENT-CLASS-375-1	c 35	N81-19427 *	US-PATENT-CLASS-403-328	c 37	N90-17154 *
US-PATENT-CLASS-371-041	c 17	N90-21061 *	US-PATENT-CLASS-375-1	c 33	N81-33405 *	US-PATENT-CLASS-403-331	c 37	N82-32732 *
US-PATENT-CLASS-371-043	c 17	N90-21061 *	US-PATENT-CLASS-375-23	c 32	N87-21207 *	US-PATENT-CLASS-403-340	c 37	N82-32732 *
US-PATENT-CLASS-371-11.3	c 60	N90-21527 *	US-PATENT-CLASS-375-34	c 35	N81-19427 *	US-PATENT-CLASS-403-341	c 18	N87-27713 *
US-PATENT-CLASS-371-20	c 33	N81-26359 *	US-PATENT-CLASS-375-39	c 32	N87-25511 *	US-PATENT-CLASS-403-348	c 37	N85-30336 *
US-PATENT-CLASS-371-25	c 33	N81-26359 *	US-PATENT-CLASS-375-54	c 33	N81-15192 *	US-PATENT-CLASS-403-388	c 37	N86-27630 *
US-PATENT-CLASS-371-37.4	c 17	N90-21061 *	US-PATENT-CLASS-375-54	c 32	N87-25511 *	US-PATENT-CLASS-403-408.1	c 37	N86-27630 *
US-PATENT-CLASS-371-37	c 60	N87-21591 *	US-PATENT-CLASS-375-54	c 33	N87-25531 *	US-PATENT-CLASS-403-408	c 37	N85-29285 *
US-PATENT-CLASS-371-38.1	c 17	N90-21061 *	US-PATENT-CLASS-375-58	c 32	N81-15179 *	US-PATENT-CLASS-403-4	c 18	N89-28554 *
US-PATENT-CLASS-371-40	c 60	N87-21591 *	US-PATENT-CLASS-375-59	c 33	N87-25531 *	US-PATENT-CLASS-403-51	c 18	N89-28553 *
US-PATENT-CLASS-371-43	c 33	N87-25531 *	US-PATENT-CLASS-375-67	c 33	N81-15192 *	US-PATENT-CLASS-403-56	c 18	N85-29991 *
US-PATENT-CLASS-371-63	c 17	N87-16863 *	US-PATENT-CLASS-375-76	c 33	N87-25531 *	US-PATENT-CLASS-403-64	c 31	N86-19479 *
US-PATENT-CLASS-371-68	c 60	N82-29013 *	US-PATENT-CLASS-375-77	c 32	N84-27952 *	US-PATENT-CLASS-403-76	c 18	N85-29991 *
US-PATENT-CLASS-371-6	c 32	N83-13323 *	US-PATENT-CLASS-375-81	c 32	N84-27952 *	US-PATENT-CLASS-403-85	c 18	N87-14373 *
US-PATENT-CLASS-371-8	c 62	N90-19776 *	US-PATENT-CLASS-375-88	c 17	N87-16863 *	US-PATENT-CLASS-403-90	c 18	N85-29991 *
US-PATENT-CLASS-372-100	c 36	N84-14509 *	US-PATENT-CLASS-375-99	c 35	N81-19427 *	US-PATENT-CLASS-405-188	c 18	N90-20126 *
US-PATENT-CLASS-372-103	c 36	N84-28065 *	US-PATENT-CLASS-376-127	c 72	N87-21661 *	US-PATENT-CLASS-405-229	c 44	N79-24432 *
US-PATENT-CLASS-372-103	c 36	N87-23960 *	US-PATENT-CLASS-376-159	c 25	N85-21279 *	US-PATENT-CLASS-405-263	c 44	N79-24432 *
US-PATENT-CLASS-372-108	c 36	N84-14509 *	US-PATENT-CLASS-377-111	c 60	N90-21525 *	US-PATENT-CLASS-406-155	c 37	N84-16561 *
US-PATENT-CLASS-372-18	c 36	N87-23960 *	US-PATENT-CLASS-377-114	c 60	N90-21525 *	US-PATENT-CLASS-407-117	c 37	N81-14319 *
US-PATENT-CLASS-372-20	c 36	N84-22943 *	US-PATENT-CLASS-377-116	c 60	N90-21525 *	US-PATENT-CLASS-407-85	c 37	N81-14319 *
US-PATENT-CLASS-372-20	c 36	N87-25567 *	US-PATENT-CLASS-377-123	c 60	N90-21525 *	US-PATENT-CLASS-408-1R	c 31	N87-25491 *
US-PATENT-CLASS-372-25	c 33	N83-34189 *	US-PATENT-CLASS-377-126	c 60	N90-21525 *	US-PATENT-CLASS-408-1R	c 37	N81-14319 *
US-PATENT-CLASS-372-28	c 36	N84-22943 *	US-PATENT-CLASS-377-39	c 33	N89-14385 *	US-PATENT-CLASS-408-1R	c 31	N83-27058 *
US-PATENT-CLASS-372-32	c 36	N84-22943 *	US-PATENT-CLASS-377-69	c 60	N90-21525 *	US-PATENT-CLASS-408-111	c 37	N74-25968 *
US-PATENT-CLASS-372-32	c 33	N85-34333 *	US-PATENT-CLASS-377-78	c 60	N90-21525 *	US-PATENT-CLASS-408-112	c 37	N75-25186 *
US-PATENT-CLASS-372-38	c 36	N85-30305 *	US-PATENT-CLASS-378-104	c 33	N85-29147 *	US-PATENT-CLASS-408-137	c 15	N71-33518 *
US-PATENT-CLASS-372-43	c 36	N87-23960 *	US-PATENT-CLASS-378-112	c 33	N85-29147 *	US-PATENT-CLASS-408-186	c 37	N75-25186 *
US-PATENT-CLASS-372-46	c 36	N85-30305 *	US-PATENT-CLASS-378-2	c 34	N83-19015 *	US-PATENT-CLASS-408-193	c 37	N75-25186 *
US-PATENT-CLASS-372-4	c 36	N84-28065 *	US-PATENT-CLASS-378-2	c 74	N84-11920 *	US-PATENT-CLASS-408-195	c 37	N75-25186 *
US-PATENT-CLASS-372-4	c 36	N87-25567 *	US-PATENT-CLASS-378-43	c 34	N83-19015 *	US-PATENT-CLASS-408-61	c 31	N83-27058 *
US-PATENT-CLASS-372-50	c 36	N85-30305 *	US-PATENT-CLASS-378-43	c 74	N86-20124 *	US-PATENT-CLASS-408-80	c 37	N74-25968 *
US-PATENT-CLASS-372-55	c 36	N84-16542 *	US-PATENT-CLASS-378-58	c 38	N90-23756 *	US-PATENT-CLASS-409-131	c 31	N83-27058 *
US-PATENT-CLASS-372-56	c 36	N82-28616 *	US-PATENT-CLASS-378-58	c 74	N86-20126 *	US-PATENT-CLASS-41R	c 27	N81-15104 *
US-PATENT-CLASS-372-56	c 36	N83-10417 *	US-PATENT-CLASS-378-58	c 38	N90-23756 *	US-PATENT-CLASS-410-156	c 37	N85-34401 *
US-PATENT-CLASS-372-58	c 36	N82-28616 *	US-PATENT-CLASS-378-59	c 74	N86-20126 *	US-PATENT-CLASS-410-79	c 18	N85-29991 *
US-PATENT-CLASS-372-59	c 36	N83-10417 *	US-PATENT-CLASS-378-85	c 74	N86-20124 *	US-PATENT-CLASS-410-90	c 18	N85-29991 *
US-PATENT-CLASS-372-59	c 25	N90-20154 *	US-PATENT-CLASS-380-25	c 60	N90-25583 *	US-PATENT-CLASS-411-103	c 37	N85-30335 *
US-PATENT-CLASS-372-60	c 36	N83-10417 *	US-PATENT-CLASS-380-45	c 60	N90-25583 *	US-PATENT-CLASS-411-108	c 37	N85-30335 *
US-PATENT-CLASS-372-61	c 74	N87-14971 *	US-PATENT-CLASS-380-49	c 60	N90-25583 *	US-PATENT-CLASS-411-166	c 37	N87-22976 *
US-PATENT-CLASS-372-68	c 36	N87-23961 *	US-PATENT-CLASS-381-183	c 54	N89-29953 *	US-PATENT-CLASS-411-353	c 37	N83-19091 *
US-PATENT-CLASS-372-69	c 36	N87-25567 *	US-PATENT-CLASS-381-187	c 54	N89-29953 *	US-PATENT-CLASS-411-368	c 37	N85-29285 *
US-PATENT-CLASS-372-71	c 36	N84-28065 *	US-PATENT-CLASS-382-31	c 74	N89-14078 *	US-PATENT-CLASS-411-368	c 37	N87-22976 *
US-PATENT-CLASS-372-74	c 35	N84-12444 *	US-PATENT-CLASS-382-41	c 60	N89-26400 *	US-PATENT-CLASS-411-378	c 37	N85-29285 *
US-PATENT-CLASS-372-79	c 36	N84-16542 *	US-PATENT-CLASS-382-42	c 74	N86-21348 *	US-PATENT-CLASS-411-424	c 37	N87-22976 *
US-PATENT-CLASS-372-79	c 36	N86-29204 *	US-PATENT-CLASS-382-42	c 60	N88-24169 *	US-PATENT-CLASS-411-426	c 37	N85-29285 *
US-PATENT-CLASS-372-81	c 36	N87-23961 *	US-PATENT-CLASS-382-42	c 60	N89-26400 *	US-PATENT-CLASS-411-427	c 37	N87-22976 *
US-PATENT-CLASS-372-82	c 36	N82-28616 *	US-PATENT-CLASS-382-49	c 60	N89-26400 *	US-PATENT-CLASS-411-501	c 37	N85-29285 *
US-PATENT-CLASS-372-93	c 36	N84-14509 *	US-PATENT-CLASS-384-101	c 37	N85-33490 *	US-PATENT-CLASS-411-517	c 37	N83-19091 *
US-PATENT-CLASS-372-93	c 36	N84-28065 *	US-PATENT-CLASS-384-103	c 37	N86-19608 *	US-PATENT-CLASS-411-531	c 37	N85-29285 *
US-PATENT-CLASS-372-94	c 36	N84-14509 *	US-PATENT-CLASS-384-106	c 37	N86-19608 *	US-PATENT-CLASS-411-531	c 37	N87-22976 *
US-PATENT-CLASS-372-95	c 36	N84-28065 *	US-PATENT-CLASS-384-124	c 27	N83-34043 *	US-PATENT-CLASS-414-1	c 37	N80-14390 *
US-PATENT-CLASS-372-98	c 36	N84-14509 *	US-PATENT-CLASS-384-99	c 37	N85-33490 *	US-PATENT-CLASS-414-1	c 37	N81-14328 *
US-PATENT-CLASS-372-99	c 36	N87-25567 *	US-PATENT-CLASS-388-821	c 33	N90-21951 *	US-PATENT-CLASS-414-1	c 54	N86-28618 *
US-PATENT-CLASS-373-10	c 35	N87-23944 *	US-PATENT-CLASS-39-25.35	c 33	N86-20671 *	US-PATENT-CLASS-414-217	c 37	N85-29286 *
US-PATENT-CLASS-373-15	c 35	N87-23944 *	US-PATENT-CLASS-4-10	c 54	N74-20725 *	US-PATENT-CLASS-414-222	c 37	N82-32731 *
US-PATENT-CLASS-374-115	c 35	N86-19580 *	US-PATENT-CLASS-4-110	c 05	N72-22093 *	US-PATENT-CLASS-414-226	c 37	N82-32731 *
US-PATENT-CLASS-374-117	c 52	N85-30618 *	US-PATENT-CLASS-4-120	c 54	N74-20725 *	US-PATENT-CLASS-414-288	c 85	N85-34722 *
US-PATENT-CLASS-374-120	c 35	N86-19580 *	US-PATENT-CLASS-4-144.3	c 52	N81-24711 *	US-PATENT-CLASS-414-328	c 85	N85-34722 *
US-PATENT-CLASS-374-122	c 06	N83-10040 *	US-PATENT-CLASS-4-144.3	c 52	N81-28740 *	US-PATENT-CLASS-414-373	c 85	N85-34722 *
US-PATENT-CLASS-374-122	c 43	N85-21723 *	US-PATENT-CLASS-4-498	c 44	N84-34792 *	US-PATENT-CLASS-414-4	c 37	N79-28551 *
US-PATENT-CLASS-374-122	c 32	N87-21206 *	US-PATENT-CLASS-4-99	c 05	N72-22093 *	US-PATENT-CLASS-414-4	c 54	N81-26718 *
US-PATENT-CLASS-374-123	c 06	N83-10040 *	US-PATENT-CLASS-40-28	c 12	N71-18603 *	US-PATENT-CLASS-414-4	c 37	N86-20789 *
US-PATENT-CLASS-374-124	c 36	N90-17132 *	US-PATENT-CLASS-403-102	c 37	N85-30336 *	US-PATENT-CLASS-414-5	c 54	N86-28618 *
US-PATENT-CLASS-374-126	c 36	N90-17132 *	US-PATENT-CLASS-403-102	c 18	N87-14373 *	US-PATENT-CLASS-414-689	c 18	N89-12621 *
US-PATENT-CLASS-374-130	c 36	N90-17132 *	US-PATENT-CLASS-403-105	c 37	N79-14382 *	US-PATENT-CLASS-414-6	c 54	N79-24652 *
US-PATENT-CLASS-374-137	c 36	N85-21639 *	US-PATENT-CLASS-403-113	c 37	N86-19605 *	US-PATENT-CLASS-414-718	c 37	N86-20789 *
US-PATENT-CLASS-374-160	c 52	N85-30618 *	US-PATENT-CLASS-403-119	c 18	N87-14373 *	US-PATENT-CLASS-414-718	c 18	N89-12621 *
US-PATENT-CLASS-374-162R	c 74	N82-30071 *	US-PATENT-CLASS-403-120	c 37	N86-19605 *	US-PATENT-CLASS-414-730	c 37	N81-27519 *
US-PATENT-CLASS-374-162	c 35	N90-22770 *	US-PATENT-CLASS-403-143	c 18	N85-29991 *	US-PATENT-CLASS-414-730	c 37	N86-19603 *
US-PATENT-CLASS-374-163	c 35	N86-19580 *	US-PATENT-CLASS-403-146	c 18	N87-14373 *	US-PATENT-CLASS-414-735	c 54	N81-26718 *
US-PATENT-CLASS-374-17	c 35	N83-29650 *	US-PATENT-CLASS-403-15	c 37	N85-30334 *	US-PATENT-CLASS-414-735	c 18	N88-23828 *
US-PATENT-CLASS-374-183	c 33	N86-32624 *	US-PATENT-CLASS-403-163	c 18	N87-14373 *	US-PATENT-CLASS-414-735	c 18	N89-12621 *
US-PATENT-CLASS-374-1	c 35	N84-28019 *	US-PATENT-CLASS-403-164	c 54	N86-29507 *	US-PATENT-CLASS-414-739	c 37	N82-32731 *
US-PATENT-CLASS-374-208	c 37	N85-21651 *	US-PATENT-CLASS-403-16	c 37	N85-30334 *	US-PATENT-CLASS-414-744A	c 54	N81-26718 *
US-PATENT-CLASS-374-210	c 37	N85-21651 *	US-PATENT-CLASS-403-171	c 31	N81-25258 *	US-PATENT-CLASS-414-750	c 18	N88-23828 *
US-PATENT-CLASS-374-36	c 25	N88-29002 *	US-PATENT-CLASS-403-171	c 31	N86-19479 *	US-PATENT-CLASS-414-753	c 37	N86-20789 *

US-PATENT-CLASS-414-786	c 85	N85-34722 *	US-PATENT-CLASS-416-23	c 05	N85-29947 *	US-PATENT-CLASS-422-246	c 76	N84-35113 *
US-PATENT-CLASS-414-7	c 54	N86-28618 *	US-PATENT-CLASS-416-241A	c 07	N77-32148 *	US-PATENT-CLASS-422-246	c 76	N88-24544 *
US-PATENT-CLASS-414-7	c 54	N86-28620 *	US-PATENT-CLASS-416-241R	c 26	N84-33555 *	US-PATENT-CLASS-422-249	c 33	N81-19389 *
US-PATENT-CLASS-414-8	c 54	N86-28618 *	US-PATENT-CLASS-416-242	c 02	N84-11136 *	US-PATENT-CLASS-422-249	c 76	N84-35113 *
US-PATENT-CLASS-415-DIG.8	c 44	N82-24639 *	US-PATENT-CLASS-416-242	c 02	N84-28732 *	US-PATENT-CLASS-422-249	c 76	N90-20896 *
US-PATENT-CLASS-415-DIG.8	c 44	N84-23018 *	US-PATENT-CLASS-416-244A	c 07	N78-33101 *	US-PATENT-CLASS-422-251	c 76	N88-14835 *
US-PATENT-CLASS-415-101	c 44	N80-21828 *	US-PATENT-CLASS-416-248	c 37	N78-10468 *	US-PATENT-CLASS-422-260	c 76	N88-14835 *
US-PATENT-CLASS-415-115	c 07	N79-10057 *	US-PATENT-CLASS-416-25	c 05	N75-12930 *	US-PATENT-CLASS-422-27	c 54	N81-24724 *
US-PATENT-CLASS-415-115	c 34	N83-27144 *	US-PATENT-CLASS-416-2	c 44	N79-14527 *	US-PATENT-CLASS-422-30	c 54	N81-24724 *
US-PATENT-CLASS-415-115	c 07	N84-33410 *	US-PATENT-CLASS-416-500	c 05	N81-19087 *	US-PATENT-CLASS-422-34	c 54	N81-24724 *
US-PATENT-CLASS-415-115	c 34	N85-33433 *	US-PATENT-CLASS-416-500	c 05	N85-29947 *	US-PATENT-CLASS-422-3	c 54	N81-24724 *
US-PATENT-CLASS-415-116	c 07	N79-10057 *	US-PATENT-CLASS-416-51	c 05	N79-17847 *	US-PATENT-CLASS-422-40	c 35	N82-11432 *
US-PATENT-CLASS-415-118	c 35	N83-35338 *	US-PATENT-CLASS-416-61	c 35	N78-24515 *	US-PATENT-CLASS-422-41	c 52	N79-14749 *
US-PATENT-CLASS-415-138	c 37	N88-23978 *	US-PATENT-CLASS-416-61	c 37	N79-14382 *	US-PATENT-CLASS-422-48	c 52	N79-14749 *
US-PATENT-CLASS-415-143	c 34	N79-20335 *	US-PATENT-CLASS-416-68	c 05	N79-17847 *	US-PATENT-CLASS-422-50	c 76	N90-24169 *
US-PATENT-CLASS-415-145	c 07	N77-28118 *	US-PATENT-CLASS-416-89	c 05	N79-17847 *	US-PATENT-CLASS-422-52	c 51	N80-16714 *
US-PATENT-CLASS-415-145	c 07	N82-32366 *	US-PATENT-CLASS-416-92	c 07	N84-22560 *	US-PATENT-CLASS-422-52	c 51	N87-27569 *
US-PATENT-CLASS-415-170-R	c 37	N88-23978 *	US-PATENT-CLASS-416-97A	c 34	N85-33433 *	US-PATENT-CLASS-422-62	c 35	N90-22025 *
US-PATENT-CLASS-415-174	c 37	N79-18318 *	US-PATENT-CLASS-416-97R	c 34	N83-27144 *	US-PATENT-CLASS-422-68	c 51	N80-27067 *
US-PATENT-CLASS-415-174	c 37	N80-26658 *	US-PATENT-CLASS-416-97R	c 07	N84-22560 *	US-PATENT-CLASS-422-78	c 25	N86-19413 *
US-PATENT-CLASS-415-174	c 37	N82-19540 *	US-PATENT-CLASS-416-9	c 37	N90-23742 *	US-PATENT-CLASS-422-80	c 25	N82-12166 *
US-PATENT-CLASS-415-174	c 27	N82-29453 *	US-PATENT-CLASS-417-138	c 35	N75-19611 *	US-PATENT-CLASS-422-86	c 35	N85-29213 *
US-PATENT-CLASS-415-174	c 18	N83-20996 *	US-PATENT-CLASS-417-141	c 44	N76-29701 *	US-PATENT-CLASS-422-88	c 35	N85-29213 *
US-PATENT-CLASS-415-174	c 37	N84-22957 *	US-PATENT-CLASS-417-152	c 15	N72-22489 *	US-PATENT-CLASS-422-98	c 35	N90-22025 *
US-PATENT-CLASS-415-174	c 37	N88-20788 *	US-PATENT-CLASS-417-159	c 09	N84-27749 *	US-PATENT-CLASS-422-9	c 45	N80-14578 *
US-PATENT-CLASS-415-175	c 07	N83-31603 *	US-PATENT-CLASS-417-15	c 37	N83-26078 *	US-PATENT-CLASS-423-DIG.10	c 24	N84-22695 *
US-PATENT-CLASS-415-178	c 07	N82-32366 *	US-PATENT-CLASS-417-207	c 44	N76-29701 *	US-PATENT-CLASS-423-DIG.10	c 31	N85-20153 *
US-PATENT-CLASS-415-178	c 07	N83-31603 *	US-PATENT-CLASS-417-209	c 34	N76-17317 *	US-PATENT-CLASS-423-131	c 28	N81-15119 *
US-PATENT-CLASS-415-180	c 07	N77-23106 *	US-PATENT-CLASS-417-209	c 44	N76-29701 *	US-PATENT-CLASS-423-149	c 26	N80-14229 *
US-PATENT-CLASS-415-180	c 37	N78-10467 *	US-PATENT-CLASS-417-225	c 35	N78-10428 *	US-PATENT-CLASS-423-1	c 28	N81-15119 *
US-PATENT-CLASS-415-181	c 07	N74-28226 *	US-PATENT-CLASS-417-328	c 37	N84-28081 *	US-PATENT-CLASS-423-231	c 25	N74-12813 *
US-PATENT-CLASS-415-181	c 07	N74-31270 *	US-PATENT-CLASS-417-36	c 35	N75-19611 *	US-PATENT-CLASS-423-235	c 25	N82-28368 *
US-PATENT-CLASS-415-186	c 37	N80-26658 *	US-PATENT-CLASS-417-379	c 44	N76-29701 *	US-PATENT-CLASS-423-242	c 45	N79-12584 *
US-PATENT-CLASS-415-196	c 37	N82-19540 *	US-PATENT-CLASS-417-383	c 37	N80-31790 *	US-PATENT-CLASS-423-249	c 25	N76-27383 *
US-PATENT-CLASS-415-197	c 18	N83-20996 *	US-PATENT-CLASS-417-391	c 15	N73-24513 *	US-PATENT-CLASS-423-276	c 23	N87-23698 *
US-PATENT-CLASS-415-199	c 05	N80-14107 *	US-PATENT-CLASS-417-392	c 37	N84-28081 *	US-PATENT-CLASS-423-284	c 23	N87-23698 *
US-PATENT-CLASS-415-1	c 34	N79-20335 *	US-PATENT-CLASS-417-395	c 35	N75-19611 *	US-PATENT-CLASS-423-293	c 26	N80-14229 *
US-PATENT-CLASS-415-1	c 07	N83-31603 *	US-PATENT-CLASS-417-399	c 44	N83-14693 *	US-PATENT-CLASS-423-303	c 44	N84-23019 *
US-PATENT-CLASS-415-1	c 37	N85-29282 *	US-PATENT-CLASS-417-417	c 44	N83-28574 *	US-PATENT-CLASS-423-33-5	c 25	N79-28253 *
US-PATENT-CLASS-415-2R	c 44	N82-24639 *	US-PATENT-CLASS-417-417	c 31	N85-21404 *	US-PATENT-CLASS-423-338	c 76	N87-29360 *
US-PATENT-CLASS-415-2R	c 44	N84-23018 *	US-PATENT-CLASS-417-462	c 37	N84-28081 *	US-PATENT-CLASS-423-339	c 76	N87-29360 *
US-PATENT-CLASS-415-200	c 07	N79-14096 *	US-PATENT-CLASS-417-470	c 35	N74-15126 *	US-PATENT-CLASS-423-345	c 76	N76-25049 *
US-PATENT-CLASS-415-200	c 37	N79-18318 *	US-PATENT-CLASS-417-471	c 35	N74-15126 *	US-PATENT-CLASS-423-345	c 76	N79-23798 *
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US-PATENT-CLASS-428-71	c 03	N84-33394 *	US-PATENT-CLASS-429-253	c 23	N81-29160 *	US-PATENT-CLASS-435-38	c 51	N80-27067 *
US-PATENT-CLASS-428-71	c 27	N89-12741 *	US-PATENT-CLASS-429-253	c 25	N83-13188 *	US-PATENT-CLASS-435-38	c 51	N83-27569 *
US-PATENT-CLASS-428-73	c 24	N78-10214 *	US-PATENT-CLASS-429-254	c 44	N78-25530 *	US-PATENT-CLASS-435-38	c 51	N83-28849 *
US-PATENT-CLASS-428-73	c 24	N78-15180 *	US-PATENT-CLASS-429-254	c 44	N82-29708 *	US-PATENT-CLASS-435-39	c 51	N80-27067 *
US-PATENT-CLASS-428-73	c 24	N79-16915 *	US-PATENT-CLASS-429-254	c 44	N83-32176 *	US-PATENT-CLASS-435-39	c 35	N82-28604 *
US-PATENT-CLASS-428-74	c 24	N88-18628 *	US-PATENT-CLASS-429-27	c 27	N81-24257 *	US-PATENT-CLASS-435-39	c 51	N83-27569 *
US-PATENT-CLASS-428-76	c 03	N84-33394 *	US-PATENT-CLASS-429-27	c 23	N81-29160 *	US-PATENT-CLASS-435-39	c 51	N83-28849 *
US-PATENT-CLASS-428-76	c 24	N88-18628 *	US-PATENT-CLASS-429-27	c 44	N86-25874 *	US-PATENT-CLASS-435-3	c 51	N80-27067 *
US-PATENT-CLASS-428-76	c 27	N89-12741 *	US-PATENT-CLASS-429-28	c 27	N81-24257 *	US-PATENT-CLASS-435-3	c 51	N83-27569 *
US-PATENT-CLASS-428-77	c 27	N76-14264 *	US-PATENT-CLASS-429-28	c 23	N81-29160 *	US-PATENT-CLASS-435-3	c 51	N83-28849 *
US-PATENT-CLASS-428-77	c 27	N79-12221 *	US-PATENT-CLASS-429-33	c 44	N79-17313 *	US-PATENT-CLASS-435-5	c 51	N81-28698 *
US-PATENT-CLASS-428-78	c 27	N84-14323 *	US-PATENT-CLASS-429-33	c 44	N82-29710 *	US-PATENT-CLASS-435-807	c 51	N83-28849 *
US-PATENT-CLASS-428-901	c 76	N90-24168 *	US-PATENT-CLASS-429-34	c 44	N77-14581 *	US-PATENT-CLASS-435-842	c 23	N85-35227 *
US-PATENT-CLASS-428-902	c 24	N77-27188 *	US-PATENT-CLASS-429-34	c 44	N83-27344 *	US-PATENT-CLASS-435-8	c 51	N80-27569 *
US-PATENT-CLASS-428-902	c 24	N78-10214 *	US-PATENT-CLASS-429-40	c 44	N82-29710 *	US-PATENT-CLASS-436-137	c 35	N90-22025 *
US-PATENT-CLASS-428-902	c 24	N78-17149 *	US-PATENT-CLASS-429-40	c 44	N83-27344 *	US-PATENT-CLASS-436-143	c 35	N90-22025 *
US-PATENT-CLASS-428-902	c 24	N81-14000 *	US-PATENT-CLASS-429-41	c 44	N79-10513 *	US-PATENT-CLASS-436-155	c 25	N86-19413 *
US-PATENT-CLASS-428-902	c 31	N81-25258 *	US-PATENT-CLASS-429-42	c 44	N79-10513 *	US-PATENT-CLASS-436-2	c 35	N85-29213 *
US-PATENT-CLASS-428-902	c 27	N81-27272 *	US-PATENT-CLASS-429-44	c 44	N84-28205 *	US-PATENT-CLASS-436-55	c 35	N90-22025 *
US-PATENT-CLASS-428-902	c 27	N83-18908 *	US-PATENT-CLASS-429-51	c 44	N86-19721 *	US-PATENT-CLASS-437-128	c 76	N88-14836 *
US-PATENT-CLASS-428-902	c 24	N83-33950 *	US-PATENT-CLASS-429-57	c 44	N86-25874 *	US-PATENT-CLASS-437-131	c 76	N88-14836 *
US-PATENT-CLASS-428-902	c 27	N84-14322 *	US-PATENT-CLASS-429-58	c 35	N85-21596 *	US-PATENT-CLASS-437-3	c 76	N88-14836 *
US-PATENT-CLASS-428-902	c 27	N84-22745 *	US-PATENT-CLASS-429-94	c 44	N81-24521 *	US-PATENT-CLASS-437-7	c 76	N88-14836 *
US-PATENT-CLASS-428-903	c 24	N83-33950 *	US-PATENT-CLASS-430-17	c 35	N82-11432 *	US-PATENT-CLASS-437-8	c 76	N88-14836 *
US-PATENT-CLASS-428-911	c 27	N76-16230 *	US-PATENT-CLASS-430-271	c 27	N81-25209 *	US-PATENT-CLASS-437-903	c 76	N90-19884 *
US-PATENT-CLASS-428-911	c 24	N77-27188 *	US-PATENT-CLASS-430-325	c 27	N81-25209 *	US-PATENT-CLASS-437-969	c 76	N88-14836 *
US-PATENT-CLASS-428-913	c 34	N78-25350 *	US-PATENT-CLASS-430-329	c 27	N81-25209 *	US-PATENT-CLASS-439-271	c 33	N88-14836 *
US-PATENT-CLASS-428-913	c 27	N83-18908 *	US-PATENT-CLASS-430-330	c 27	N81-25209 *	US-PATENT-CLASS-439-578	c 33	N88-14270 *
US-PATENT-CLASS-428-913	c 76	N85-33826 *	US-PATENT-CLASS-430-372	c 35	N82-11432 *	US-PATENT-CLASS-44-1-SR	c 25	N85-35253 *
US-PATENT-CLASS-428-920	c 27	N76-16230 *	US-PATENT-CLASS-431-10	c 34	N78-27357 *	US-PATENT-CLASS-44-1R	c 44	N78-31527 *
US-PATENT-CLASS-428-920	c 27	N76-22377 *	US-PATENT-CLASS-431-10	c 25	N79-11511 *	US-PATENT-CLASS-44-1R	c 25	N81-33246 *
US-PATENT-CLASS-428-920	c 27	N76-23426 *	US-PATENT-CLASS-431-116	c 44	N77-10636 *	US-PATENT-CLASS-44-1SR	c 25	N82-29371 *
US-PATENT-CLASS-428-920	c 24	N78-15180 *	US-PATENT-CLASS-431-11	c 44	N77-10636 *	US-PATENT-CLASS-44-1SR	c 25	N83-31743 *
US-PATENT-CLASS-428-920	c 27	N78-32260 *	US-PATENT-CLASS-431-13	c 25	N88-29002 *	US-PATENT-CLASS-44-2	c 44	N78-31527 *
US-PATENT-CLASS-428-920	c 27	N79-12221 *	US-PATENT-CLASS-431-158	c 25	N78-10224 *	US-PATENT-CLASS-44-2	c 25	N81-33246 *
US-PATENT-CLASS-428-920	c 24	N79-25142 *	US-PATENT-CLASS-431-162	c 44	N77-10636 *	US-PATENT-CLASS-44-50	c 27	N81-17261 *
US-PATENT-CLASS-428-920	c 15	N79-26100 *	US-PATENT-CLASS-431-163	c 44	N76-29704 *	US-PATENT-CLASS-44-51	c 25	N79-11152 *
US-PATENT-CLASS-428-920	c 27	N81-27272 *	US-PATENT-CLASS-431-170	c 44	N77-10636 *	US-PATENT-CLASS-44-62	c 27	N81-17261 *
US-PATENT-CLASS-428-920	c 27	N83-18908 *	US-PATENT-CLASS-431-173	c 23	N73-30665 *	US-PATENT-CLASS-44-7R	c 28	N81-14103 *
US-PATENT-CLASS-428-920	c 27	N84-14322 *	US-PATENT-CLASS-431-1	c 25	N84-16276 *	US-PATENT-CLASS-44-77	c 06	N71-23499 *
US-PATENT-CLASS-428-920	c 27	N84-22745 *	US-PATENT-CLASS-431-202	c 25	N74-33378 *	US-PATENT-CLASS-44-75-35	c 37	N85-33489 *
US-PATENT-CLASS-428-920	c 24	N88-18628 *	US-PATENT-CLASS-431-208	c 25	N79-11151 *	US-PATENT-CLASS-455-102	c 33	N81-15192 *
US-PATENT-CLASS-428-921	c 27	N76-16230 *	US-PATENT-CLASS-431-210	c 44	N76-29704 *	US-PATENT-CLASS-455-115	c 32	N89-14374 *
US-PATENT-CLASS-428-921	c 24	N78-27180 *	US-PATENT-CLASS-431-2	c 07	N81-29129 *	US-PATENT-CLASS-455-117	c 32	N89-14374 *
US-PATENT-CLASS-428-921	c 24	N81-13999 *	US-PATENT-CLASS-431-328	c 34	N78-27357 *	US-PATENT-CLASS-455-137	c 35	N82-15381 *
US-PATENT-CLASS-428-921	c 03	N84-33394 *	US-PATENT-CLASS-431-352	c 28	N71-28915 *	US-PATENT-CLASS-455-139	c 35	N82-15381 *
US-PATENT-CLASS-428-921	c 24	N86-28131 *	US-PATENT-CLASS-431-352	c 25	N78-10224 *	US-PATENT-CLASS-455-202	c 33	N82-29539 *
US-PATENT-CLASS-428-922	c 27	N78-14164 *	US-PATENT-CLASS-431-352	c 25	N90-11824 *	US-PATENT-CLASS-455-202	c 32	N84-27952 *
US-PATENT-CLASS-428-938	c 27	N82-28441 *	US-PATENT-CLASS-431-41	c 44	N77-10636 *	US-PATENT-CLASS-455-208	c 33	N82-29539 *
US-PATENT-CLASS-428-93	c 34	N78-25350 *	US-PATENT-CLASS-431-4	c 44	N76-29704 *	US-PATENT-CLASS-455-208	c 32	N84-27952 *
US-PATENT-CLASS-428-941	c 27	N82-28441 *	US-PATENT-CLASS-431-76	c 25	N88-29002 *	US-PATENT-CLASS-455-234	c 33	N82-29539 *
US-PATENT-CLASS-428-94	c 34	N78-25350 *	US-PATENT-CLASS-431-7	c 34	N78-27357 *	US-PATENT-CLASS-455-260	c 32	N84-27952 *
US-PATENT-CLASS-428-95	c 34	N78-25350 *	US-PATENT-CLASS-431-9	c 23	N73-30665 *	US-PATENT-CLASS-455-265	c 32	N84-27952 *
US-PATENT-CLASS-428-96	c 34	N78-25350 *	US-PATENT-CLASS-432-18	c 35	N86-20750 *	US-PATENT-CLASS-455-278	c 32	N81-29308 *
US-PATENT-CLASS-428-97	c 34	N78-25350 *	US-PATENT-CLASS-432-223	c 25	N79-11151 *	US-PATENT-CLASS-455-306	c 33	N82-29539 *
US-PATENT-CLASS-429-101	c 44	N79-17313 *	US-PATENT-CLASS-432-227	c 35	N83-24828 *	US-PATENT-CLASS-455-51	c 32	N81-14186 *
US-PATENT-CLASS-429-101	c 44	N79-26474 *	US-PATENT-CLASS-432-264	c 33	N81-19389 *	US-PATENT-CLASS-455-608	c 32	N87-21207 *
US-PATENT-CLASS-429-101	c 33	N80-20487 *	US-PATENT-CLASS-432-29	c 25	N79-11151 *	US-PATENT-CLASS-455-60	c 35	N82-15381 *
US-PATENT-CLASS-429-105	c 44	N77-22606 *	US-PATENT-CLASS-432-58	c 35	N83-24828 *	US-PATENT-CLASS-455-610	c 74	N82-19029 *
US-PATENT-CLASS-429-105	c 33	N80-20487 *	US-PATENT-CLASS-433-118	c 52	N82-29862 *	US-PATENT-CLASS-455-612	c 74	N82-19029 *
US-PATENT-CLASS-429-105	c 44	N83-27344 *	US-PATENT-CLASS-433-125	c 52	N82-29862 *	US-PATENT-CLASS-455-612	c 74	N83-29032 *
US-PATENT-CLASS-429-107	c 44	N77-22606 *	US-PATENT-CLASS-433-86	c 52	N82-29862 *	US-PATENT-CLASS-455-615	c 74	N82-19029 *
US-PATENT-CLASS-429-107	c 33	N80-20487 *	US-PATENT-CLASS-434-114	c 82	N87-29372 *	US-PATENT-CLASS-455-617	c 74	N82-19029 *
US-PATENT-CLASS-429-107	c 44	N83-27344 *	US-PATENT-CLASS-434-242	c 09	N85-19990 *	US-PATENT-CLASS-455-619	c 32	N81-14186 *
US-PATENT-CLASS-429-109	c 33	N80-20487 *	US-PATENT-CLASS-434-243	c 09	N85-19990 *	US-PATENT-CLASS-455-65	c 32	N87-25511 *
US-PATENT-CLASS-429-109	c 44	N83-27344 *	US-PATENT-CLASS-434-2	c 32	N84-27951 *	US-PATENT-CLASS-455-67	c 32	N89-14374 *
US-PATENT-CLASS-429-109	c 44	N86-19721 *	US-PATENT-CLASS-434-34	c 14	N87-25344 *	US-PATENT-CLASS-455-71	c 32	N81-14186 *
US-PATENT-CLASS-429-111	c 25	N84-12262 *	US-PATENT-CLASS-434-35	c 09	N85-19990 *	US-PATENT-CLASS-455-73	c 32	N85-29118 *
US-PATENT-CLASS-429-111	c 44	N84-23019 *	US-PATENT-CLASS-434-38	c 36	N83-34304 *	US-PATENT-CLASS-455-98	c 32	N89-14374 *
US-PATENT-CLASS-429-120	c 44	N81-24521 *	US-PATENT-CLASS-434-403	c 31	N83-34073 *	US-PATENT-CLASS-467-28	c 39	N80-10507 *
US-PATENT-CLASS-429-139	c 27	N80-32516 *	US-PATENT-CLASS-434-42	c 09	N82-24212 *	US-PATENT-CLASS-47-1.2	c 51	N75-25503 *
US-PATENT-CLASS-429-139	c 27	N81-24257 *	US-PATENT-CLASS-434-43	c 09	N82-24212 *	US-PATENT-CLASS-47-1.4	c 31	N73-32750 *
US-PATENT-CLASS-429-13	c 44	N79-10513 *	US-PATENT-CLASS-434-49	c 09	N85-19990 *	US-PATENT-CLASS-47-17	c 31	N73-32750 *
US-PATENT-CLASS-429-144	c 44	N82-29708 *	US-PATENT-CLASS-434-4	c 36	N83-34304 *	US-PATENT-CLASS-47-26	c 37	N83-26078 *
US-PATENT-CLASS-429-144	c 44	N83-32176 *	US-PATENT-CLASS-434-4	c 35	N86-32697 *	US-PATENT-CLASS-47-39	c 51	N75-25503 *
US-PATENT-CLASS-429-15	c 44	N79-26474 *	US-PATENT-CLASS-434-59	c 54	N81-27806 *	US-PATENT-CLASS-47-58	c 51	N75-25503 *
US-PATENT-CLASS-429-15	c 44	N86-19721 *	US-PATENT-CLASS-434-88	c 31	N83-34073 *	US-PATENT-CLASS-47-58	c 51	N83-17045 *
US-PATENT-CLASS-429-160	c 44	N81-24521 *	US-PATENT-CLASS-435-160	c 23	N85-35227 *	US-PATENT-CLASS-47-58	c 45	N84-12654 *
US-PATENT-CLASS-429-164	c 44	N81-24521 *	US-PATENT-CLASS-435-289	c 51	N80-27067 *	US-PATENT-CLASS-474-205	c 37	N80-32717 *
US-PATENT-CLASS-429-190	c 44	N77-22606 *	US-PATENT-CLASS-435-289	c 51	N83-27569 *	US-PATENT-CLASS-474-220	c 37	N87-17034 *
US-PATENT-CLASS-429-193	c 44	N82-29710 *	US-PATENT-CLASS-435-290	c 51	N80-27067 *	US-PATENT-CLASS-48-DIG.8	c 28	N80-10374 *
US-PATENT-CLASS-429-19	c 44	N86-19721 *	US-PATENT-CLASS-435-291	c 51	N80-27067 *	US-PATENT-CLASS-48-10-3	c 28	N80-10374 *
US-PATENT-CLASS-429-206	c 25	N83-13188 *	US-PATENT-CLASS-435-291	c 51	N81-28698 *	US-PATENT-CLASS-48-102A	c 28	N80-10374 *
US-PATENT-CLASS-429-206	c 33	N84-14422 *	US-PATENT-CLASS-435-291	c 35	N82-28604 *	US-PATENT-CLASS-48-107	c 28	N80-10374 *
US-PATENT-CLASS-429-206	c 33	N85-29144 *	US-PATENT-CLASS-435-291	c 51	N83-27569 *	US-PATENT-CLASS-48-116	c 44	N76-18642 *
US-PATENT-CLASS-429-223	c 26	N84-22734 *	US-PATENT-CLASS-435-311	c 51	N80-27067 *	US-PATENT-CLASS-48-116	c 44	N77-10636 *
US-PATENT-CLASS-429-229	c 33	N84-14422 *	US-PATENT-CLASS-435-311	c 51	N90-17252 *	US-PATENT-CLASS-48-117	c 44	N77-10636 *
US-PATENT-CLASS-429-234	c 26	N84-22734 *	US-PATENT-CLASS-435-316	c 51	N90-17252 *	US-PATENT-CLASS-48-117	c 44	N77-10636 *
US-PATENT-CLASS-429-23	c 44	N77-14581 *	US-PATENT-CLASS-435-316	c 51	N90-17252 *	US-PATENT-CLASS-48-197-R	c 25	N86-25428 *
US-PATENT-CLASS-429-249	c 27	N81-24257 *	US-PATENT-CLASS-435-32	c 51	N80-27067 *	US-PATENT-CLASS-48-197R	c 44	N76-29704 *
US-PATENT-CLASS-429-249	c 23	N81-29160 *	US-PATENT-CLASS-435-34	c 51	N80-16714 *	US-PATENT-CLASS-48-197R	c 44	N77-10636 *
US-PATENT-CLASS-429-249	c 33	N85-29144 *	US-PATENT-CLASS-435-34	c 51	N80-27067 *	US-PATENT-CLASS-48-212	c 44	N77-10636 *
US-PATENT-CLASS-429-251	c 44	N82-29708 *	US-PATENT-CLASS-435-34	c 51	N81-28698 *			



US-PATENT-CLASS-48-215	c 44	N76-29700 *	US-PATENT-CLASS-52-594	c 32	N73-13921 *	US-PATENT-CLASS-524-494	c 27	N84-14322 *
US-PATENT-CLASS-48-61	c 44	N77-10636 *	US-PATENT-CLASS-52-632	c 31	N81-27324 *	US-PATENT-CLASS-524-496	c 27	N84-14322 *
US-PATENT-CLASS-48-61	c 28	N80-10374 *	US-PATENT-CLASS-52-632	c 31	N86-19479 *	US-PATENT-CLASS-524-500	c 27	N84-14322 *
US-PATENT-CLASS-48-63	c 44	N76-18642 *	US-PATENT-CLASS-52-632	c 37	N86-32737 *	US-PATENT-CLASS-524-503	c 27	N83-19900 *
US-PATENT-CLASS-48-75	c 44	N76-18642 *	US-PATENT-CLASS-52-632	c 31	N87-25492 *	US-PATENT-CLASS-524-530	c 27	N84-14322 *
US-PATENT-CLASS-48-89	c 44	N82-16475 *	US-PATENT-CLASS-52-637	c 39	N76-31562 *	US-PATENT-CLASS-524-548	c 27	N86-20560 *
US-PATENT-CLASS-48-95	c 44	N76-18642 *	US-PATENT-CLASS-52-637	c 31	N86-19479 *	US-PATENT-CLASS-524-548	c 27	N87-22845 *
US-PATENT-CLASS-48-95	c 44	N76-29700 *	US-PATENT-CLASS-52-645	c 31	N81-25259 *	US-PATENT-CLASS-524-564	c 27	N83-19900 *
US-PATENT-CLASS-48-99	c 44	N82-16475 *	US-PATENT-CLASS-52-645	c 37	N86-25789 *	US-PATENT-CLASS-524-567	c 27	N85-29044 *
US-PATENT-CLASS-49-DIG.1	c 34	N78-25350 *	US-PATENT-CLASS-52-645	c 37	N86-32737 *	US-PATENT-CLASS-524-600	c 27	N90-16950 *
US-PATENT-CLASS-49-171	c 31	N81-19343 *	US-PATENT-CLASS-52-646	c 31	N73-32749 *	US-PATENT-CLASS-524-607	c 27	N90-16950 *
US-PATENT-CLASS-49-253	c 18	N90-19278 *	US-PATENT-CLASS-52-646	c 31	N86-19479 *	US-PATENT-CLASS-524-726	c 27	N83-28240 *
US-PATENT-CLASS-49-479	c 34	N78-25350 *	US-PATENT-CLASS-52-646	c 37	N86-32737 *	US-PATENT-CLASS-524-786	c 27	N83-19900 *
US-PATENT-CLASS-49-485	c 34	N78-25350 *	US-PATENT-CLASS-52-646	c 31	N87-25492 *	US-PATENT-CLASS-525-107	c 27	N85-34281 *
US-PATENT-CLASS-49-68	c 18	N74-22136 *	US-PATENT-CLASS-52-646	c 18	N88-28958 *	US-PATENT-CLASS-525-108	c 27	N86-27451 *
US-PATENT-CLASS-5-345	c 05	N70-33285 *	US-PATENT-CLASS-52-646	c 37	N88-29180 *	US-PATENT-CLASS-525-113	c 27	N85-34281 *
US-PATENT-CLASS-5-459	c 03	N84-33394 *	US-PATENT-CLASS-52-648	c 11	N72-25287 *	US-PATENT-CLASS-525-115	c 27	N86-27451 *
US-PATENT-CLASS-5-69	c 05	N72-11085 *	US-PATENT-CLASS-52-648	c 39	N76-31562 *	US-PATENT-CLASS-525-119	c 27	N85-34281 *
US-PATENT-CLASS-5-81-R	c 85	N87-21755 *	US-PATENT-CLASS-52-648	c 31	N81-25258 *	US-PATENT-CLASS-525-119	c 27	N86-27451 *
US-PATENT-CLASS-5-82	c 05	N71-23159 *	US-PATENT-CLASS-52-648	c 31	N86-19479 *	US-PATENT-CLASS-525-122	c 27	N86-27451 *
US-PATENT-CLASS-501-88	c 27	N88-29040 *	US-PATENT-CLASS-52-648	c 37	N86-25789 *	US-PATENT-CLASS-525-181	c 27	N83-28240 *
US-PATENT-CLASS-501-88	c 27	N90-21177 *	US-PATENT-CLASS-52-648	c 18	N88-28958 *	US-PATENT-CLASS-525-181	c 27	N85-21349 *
US-PATENT-CLASS-501-91	c 27	N88-29040 *	US-PATENT-CLASS-52-648	c 37	N88-29180 *	US-PATENT-CLASS-525-182	c 27	N85-21349 *
US-PATENT-CLASS-501-91	c 27	N90-21177 *	US-PATENT-CLASS-52-648	c 18	N89-28554 *	US-PATENT-CLASS-525-182	c 27	N87-22845 *
US-PATENT-CLASS-501-92	c 27	N88-29040 *	US-PATENT-CLASS-52-648	c 31	N73-32749 *	US-PATENT-CLASS-525-183	c 27	N83-28240 *
US-PATENT-CLASS-501-92	c 27	N90-21177 *	US-PATENT-CLASS-52-651	c 39	N76-31562 *	US-PATENT-CLASS-525-183	c 27	N85-21349 *
US-PATENT-CLASS-501-93	c 27	N88-29040 *	US-PATENT-CLASS-52-655	c 11	N72-25287 *	US-PATENT-CLASS-525-184	c 27	N83-28240 *
US-PATENT-CLASS-502-217	c 25	N90-23517 *	US-PATENT-CLASS-52-705	c 37	N76-19437 *	US-PATENT-CLASS-525-184	c 27	N85-21349 *
US-PATENT-CLASS-502-218	c 25	N90-23517 *	US-PATENT-CLASS-52-71	c 18	N75-27040 *	US-PATENT-CLASS-525-186	c 27	N85-34281 *
US-PATENT-CLASS-502-226	c 25	N90-23517 *	US-PATENT-CLASS-52-726	c 39	N76-31562 *	US-PATENT-CLASS-525-186	c 27	N86-20560 *
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US-PATENT-CLASS-88-24	c 23	N71-21882 *	US-PATENT-CLASS-96-36.2	c 15	N72-25452 *	US-PATENT-3,115,630	c 31	N70-37981 *
US-PATENT-CLASS-89-1.14	c 37	N87-23983 *	US-PATENT-CLASS-96-38.3	c 35	N74-26946 *	US-PATENT-3,118,100	c 03	N71-29129 *
US-PATENT-CLASS-89-1.14	c 37	N90-21390 *	US-PATENT-CLASS-96-49	c 14	N71-17574 *	US-PATENT-3,119,086	c 35	N79-33449 *
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US-PATENT-CLASS-89-1.5	c 31	N71-15675 *	US-PATENT-CLASS-98-1.5	c 44	N78-32539 *	US-PATENT-3,121,309	c 28	N70-35381 *
US-PATENT-CLASS-89-1.5	c 15	N71-24500 *	US-PATENT-CLASS-98-1	c 54	N78-17679 *	US-PATENT-3,122,000	c 15	N70-38020 *
US-PATENT-CLASS-89-1.7	c 11	N70-38202 *	US-PATENT-CLASS-98-39	c 31	N74-27902 *	US-PATENT-3,122,098	c 28	N70-38181 *

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US-PATENT-3,648,083	c 12	N72-25292 *	US-PATENT-3,670,202	c 14	N72-27411 *	US-PATENT-3,702,841	c 18	N73-13562 *
US-PATENT-3,648,152	c 03	N72-23048 *	US-PATENT-3,670,241	c 14	N72-27408 *	US-PATENT-3,702,898	c 10	N73-13235 *
US-PATENT-3,648,209	c 09	N72-27226 *	US-PATENT-3,670,290	c 09	N72-28225 *	US-PATENT-3,702,933	c 23	N73-13662 *
US-PATENT-3,648,250	c 09	N72-25248 *	US-PATENT-3,670,559	c 33	N72-27959 *	US-PATENT-3,702,951	c 09	N73-13208 *
US-PATENT-3,648,256	c 08	N72-25207 *	US-PATENT-3,670,563	c 14	N72-27412 *	US-PATENT-3,702,972	c 16	N73-13489 *
US-PATENT-3,648,275	c 08	N72-25206 *	US-PATENT-3,670,564	c 11	N72-27262 *	US-PATENT-3,702,979	c 14	N73-13420 *
US-PATENT-3,648,461	c 28	N72-23810 *	US-PATENT-3,670,890	c 05	N72-27102 *	US-PATENT-3,704,284	c 74	N81-19898 *
US-PATENT-3,648,516	c 35	N74-22095 *	US-PATENT-3,671,105	c 26	N72-27784 *	US-PATENT-3,704,659	c 14	N73-14427 *
US-PATENT-3,649,242	c 15	N72-25448 *	US-PATENT-3,671,329	c 14	N72-27410 *	US-PATENT-3,705,255	c 15	N73-14469 *
US-PATENT-3,649,353	c 26	N72-28762 *	US-PATENT-3,671,497	c 06	N72-27144 *	US-PATENT-3,705,288	c 15	N73-14468 *
US-PATENT-3,649,356	c 15	N72-25447 *	US-PATENT-3,671,798	c 10	N72-27246 *	US-PATENT-3,705,316	c 09	N73-14214 *
US-PATENT-3,649,462	c 11	N72-25284 *	US-PATENT-3,672,999	c 03	N72-27053 *	US-PATENT-3,705,406	c 07	N73-14130 *
US-PATENT-3,649,907	c 09	N72-23172 *	US-PATENT-3,673,424	c 09	N72-27227 *	US-PATENT-3,706,221	c 14	N73-14429 *
US-PATENT-3,649,921	c 05	N72-23085 *	US-PATENT-3,673,440	c 09	N72-27228 *	US-PATENT-3,706,230	c 31	N73-14855 *
US-PATENT-3,649,935	c 07	N72-25170 *	US-PATENT-3,675,332	c 14	N72-28436 *	US-PATENT-3,706,281	c 31	N73-14853 *
US-PATENT-3,650,095	c 14	N72-23457 *	US-PATENT-3,675,376	c 15	N72-28496 *	US-PATENT-3,706,583	c 18	N73-14584 *
US-PATENT-3,650,474	c 28	N72-23809 *	US-PATENT-3,675,712	c 03	N72-28025 *	US-PATENT-3,706,970	c 21	N73-14692 *
US-PATENT-3,651,008	c 27	N81-24258 *	US-PATENT-3,675,910	c 17	N72-28535 *	US-PATENT-3,708,359	c 27	N73-16764 *
US-PATENT-3,653,052	c 09	N72-25247 *	US-PATENT-3,675,935	c 15	N72-29488 *	US-PATENT-3,708,419	c 33	N73-16918 *
US-PATENT-3,653,882	c 18	N72-25539 *	US-PATENT-3,676,084	c 17	N72-28536 *	US-PATENT-3,708,671	c 14	N73-16483 *
US-PATENT-3,653,970	c 03	N72-24037 *	US-PATENT-3,676,674	c 14	N72-29464 *	US-PATENT-3,708,674	c 14	N73-16484 *
US-PATENT-3,654,036	c 03	N72-25019 *	US-PATENT-3,676,754	c 26	N72-28761 *	US-PATENT-3,709,663	c 06	N73-16106 *
US-PATENT-3,655,814	c 27	N81-15104 *	US-PATENT-3,676,772	c 10	N72-28240 *	US-PATENT-3,710,122	c 16	N73-16536 *
US-PATENT-3,656,313	c 23	N72-25619 *	US-PATENT-3,676,787	c 16	N72-28521 *	US-PATENT-3,710,257	c 07	N73-16121 *
US-PATENT-3,656,317	c 33	N72-25911 *	US-PATENT-3,676,809	c 09	N72-29172 *	US-PATENT-3,710,261	c 10	N73-16205 *
US-PATENT-3,656,352	c 14	N72-25411 *	US-PATENT-3,678,191	c 10	N72-31273 *	US-PATENT-3,710,329	c 10	N73-16206 *
US-PATENT-3,656,781	c 15	N72-25450 *	US-PATENT-3,678,654	c 06	N72-31140 *	US-PATENT-3,711,042	c 02	N73-19004 *
US-PATENT-3,657,190	c 23	N82-29358 *	US-PATENT-3,678,685	c 21	N72-31637 *	US-PATENT-3,711,701	c 74	N77-21941 *
US-PATENT-3,657,549	c 14	N72-25409 *	US-PATENT-3,678,771	c 37	N74-23070 *	US-PATENT-3,712,120	c 14	N73-19421 *
US-PATENT-3,657,644	c 14	N72-24477 *	US-PATENT-3,679,360	c 04	N72-33072 *	US-PATENT-3,712,121	c 14	N73-19420 *
US-PATENT-3,657,928	c 14	N72-25410 *	US-PATENT-3,679,899	c 06	N72-31141 *	US-PATENT-3,712,132	c 14	N73-20478 *
US-PATENT-3,658,295	c 15	N72-25451 *	US-PATENT-3,680,142	c 09	N72-31235 *	US-PATENT-3,712,195	c 14	N73-19419 *
US-PATENT-3,658,569	c 15	N72-25452 *	US-PATENT-3,680,144	c 07	N72-32169 *	US-PATENT-3,712,591	c 15	N73-19458 *
US-PATENT-3,658,608	c 27	N72-25699 *	US-PATENT-3,680,830	c 15	N72-31483 *	US-PATENT-3,713,163	c 09	N73-19234 *
US-PATENT-3,658,974	c 15	N72-24522 *	US-PATENT-3,681,581	c 08	N72-31226 *	US-PATENT-3,713,290	c 28	N73-19793 *
US-PATENT-3,659,043	c 14	N72-25412 *	US-PATENT-3,686,542	c 14	N72-31446 *	US-PATENT-3,713,480	c 05	N73-20137 *
US-PATENT-3,659,053	c 08	N72-25208 *	US-PATENT-3,690,291	c 15	N72-32487 *	US-PATENT-3,713,987	c 15	N73-20514 *
US-PATENT-3,659,148	c 09	N72-25250 *	US-PATENT-3,692,533	c 05	N72-33096 *	US-PATENT-3,714,332	c 15	N73-19457 *
US-PATENT-3,659,184	c 09	N72-25251 *	US-PATENT-3,693,002	c 25	N72-32688 *	US-PATENT-3,714,405	c 10	N73-20253 *
US-PATENT-3,659,225	c 16	N72-25485 *	US-PATENT-3,693,105	c 10	N72-33230 *	US-PATENT-3,714,432	c 14	N73-20475 *
US-PATENT-3,659,292	c 08	N72-25209 *	US-PATENT-3,693,346	c 15	N72-33477 *	US-PATENT-3,714,526	c 09	N73-19235 *
US-PATENT-3,660,240	c 06	N72-25149 *	US-PATENT-3,693,418	c 14	N72-33377 *	US-PATENT-3,714,588	c 09	N73-20231 *
US-PATENT-3,660,434	c 06	N72-25148 *	US-PATENT-3,694,041	c 15	N72-33476 *	US-PATENT-3,714,624	c 14	N73-20474 *
US-PATENT-3,660,704	c 15	N72-25456 *	US-PATENT-3,694,094	c 14	N72-32452 *	US-PATENT-3,714,645	c 08	N73-20217 *
US-PATENT-3,660,851	c 05	N72-25119 *	US-PATENT-3,694,313	c 24	N72-33681 *	US-PATENT-3,714,821	c 14	N73-20476 *
US-PATENT-3,662,337	c 08	N72-25210 *	US-PATENT-3,694,581	c 08	N72-33172 *	US-PATENT-3,714,833	c 11	N73-20267 *
US-PATENT-3,662,441	c 05	N72-25121 *	US-PATENT-3,694,655	c 25	N72-33696 *	US-PATENT-3,715,092	c 03	N73-20039 *
US-PATENT-3,662,547	c 15	N72-25455 *	US-PATENT-3,694,700	c 09	N72-33205 *	US-PATENT-3,715,152	c 23	N73-20741 *
US-PATENT-3,662,604	c 13	N72-25323 *	US-PATENT-3,694,753	c 07	N72-33146 *	US-PATENT-3,715,590	c 14	N73-20477 *
US-PATENT-3,662,661	c 31	N72-25842 *	US-PATENT-3,694,771	c 09	N73-15235 *	US-PATENT-3,715,600	c 03	N73-20040 *
US-PATENT-3,662,744	c 05	N72-25122 *	US-PATENT-3,695,101	c 11	N73-12264 *	US-PATENT-3,715,660	c 07	N73-20175 *
US-PATENT-3,662,973	c 21	N72-25595 *	US-PATENT-3,696,418	c 09	N73-12211 *	US-PATENT-3,715,693	c 07	N73-20174 *
US-PATENT-3,663,346	c 18	N72-25541 *	US-PATENT-3,696,833	c 11	N73-12265 *	US-PATENT-3,715,693	c 09	N73-20232 *
US-PATENT-3,663,347	c 18	N72-25540 *	US-PATENT-3,697,021	c 15	N73-12486 *	US-PATENT-3,715,723	c 07	N73-20176 *
US-PATENT-3,663,464	c 06	N72-25147 *	US-PATENT-3,697,630	c 15	N73-12489 *	US-PATENT-3,715,915	c 32	N73-20740 *
US-PATENT-3,663,521	c 06	N72-25152 *	US-PATENT-3,697,705	c 35	N77-21392 *	US-PATENT-3,718,863	c 10	N73-20254 *
US-PATENT-3,663,753	c 14	N72-25414 *	US-PATENT-3,697,733	c 08	N73-12176 *	US-PATENT-3,719,891	c 07	N73-20160 *
US-PATENT-3,663,828	c 09	N72-25262 *	US-PATENT-3,697,950	c 08	N73-12177 *	US-PATENT-3,720,075	c 33	N73-25952 *
US-PATENT-3,663,839	c 09	N72-25260 *	US-PATENT-3,697,968	c 21	N73-13644 *	US-PATENT-3,720,208	c 05	N73-25125 *
US-PATENT-3,663,843	c 09	N72-25255 *	US-PATENT-3,698,385	c 05	N73-13114 *	US-PATENT-3,723,745	c 14	N73-25462 *
US-PATENT-3,663,885	c 09	N72-25257 *	US-PATENT-3,698,412	c 14	N73-13418 *	US-PATENT-3,728,861	c 28	N73-24783 *
US-PATENT-3,663,886	c 09	N72-25258 *	US-PATENT-3,698,659	c 11	N73-13257 *	US-PATENT-3,729,068	c 15	N73-25512 *
US-PATENT-3,663,929	c 09	N72-25256 *	US-PATENT-3,698,667	c 02	N73-13008 *	US-PATENT-3,729,129	c 08	N73-25206 *
US-PATENT-3,663,938	c 03	N72-25020 *	US-PATENT-3,698,848	c 15	N73-13464 *	US-PATENT-3,729,260	c 14	N73-25463 *
US-PATENT-3,663,940	c 09	N72-25252 *	US-PATENT-3,699,511	c 21	N73-13643 *	US-PATENT-3,729,343	c 14	N73-24472 *
US-PATENT-3,663,941	c 09	N72-25253 *	US-PATENT-3,699,645	c 14	N73-13417 *	US-PATENT-3,729,676	c 14	N73-24473 *
US-PATENT-3,663,944	c 09	N72-25254 *	US-PATENT-3,699,799	c 15	N73-13463 *	US-PATENT-3,729,736	c 07	N73-25161 *
US-PATENT-3,664,185	c 15	N72-26371 *	US-PATENT-3,699,807	c 14	N73-13416 *	US-PATENT-3,729,743	c 07	N73-24176 *
US-PATENT-3,664,874	c 09	N72-25259 *	US-PATENT-3,699,811	c 14	N73-13415 *	US-PATENT-3,729,935	c 28	N73-24784 *
US-PATENT-3,665,064	c 05	N72-25120 *	US-PATENT-3,700,005	c 15	N73-13462 *	US-PATENT-3,730,287	c 11	N73-26238 *
US-PATENT-3,665,307	c 15	N72-25457 *	US-PATENT-3,700,192	c 31	N73-13898 *	US-PATENT-3,730,891	c 18	N73-26572 *
US-PATENT-3,665,313	c 07	N72-25173 *	US-PATENT-3,700,193	c 30	N73-12884 *	US-PATENT-3,731,528	c 12	N73-25262 *
US-PATENT-3,665,417	c 07	N72-25172 *	US-PATENT-3,700,291	c 15	N73-12488 *	US-PATENT-3,731,531	c 14	N73-25460 *
US-PATENT-3,665,467	c 14	N72-28437 *	US-PATENT-3,700,334	c 14	N73-12446 *	US-PATENT-3,732,040	c 15	N73-24513 *
US-PATENT-3,665,481	c 07	N72-25174 *	US-PATENT-3,700,503	c 14	N73-12447 *	US-PATENT-3,732,158	c 17	N73-24569 *
US-PATENT-3,665,589	c 09	N72-25261 *	US-PATENT-3,700,538	c 18	N73-12604 *	US-PATENT-3,732,397	c 33	N74-14935 *
US-PATENT-3,665,669	c 15	N72-25454 *	US-PATENT-3,700,575	c 15	N73-12487 *	US-PATENT-3,732,405	c 10	N73-25240 *
US-PATENT-3,665,670	c 11	N72-25287 *	US-PATENT-3,700,603	c 14	N73-14428 *	US-PATENT-3,732,409	c 08	N73-26175 *
US-PATENT-3,665,750	c 33	N72-25913 *	US-PATENT-3,700,812	c 10	N73-12244 *	US-PATENT-3,732,567	c 14	N73-25461 *
US-PATENT-3,665,751	c 32	N72-25877 *	US-PATENT-3,700,868	c 09	N73-13209 *	US-PATENT-3,733,350	c 06	N73-26100 *
US-PATENT-3,665,758	c 11	N72-25288 *	US-PATENT-3,700,869	c 08	N73-12175 *	US-PATENT-3,733,424	c 32	N73-26910 *
US-PATENT-3,666,051	c 15	N72-25453 *	US-PATENT-3,700,893	c 14	N73-12444 *	US-PATENT-3,733,463	c 14	N73-26430 *
US-PATENT-3,666,120	c 03	N72-25021 *	US-PATENT-3,700,897	c 14	N73-12445 *	US-PATENT-3,734,432	c 02	N73-26004 *
US-PATENT-3,666,566	c 03	N72-26031 *	US-PATENT-3,700,961	c 23	N73-13660 *	US-PATENT-3,735,206	c 10	N73-25243 *
US-PATENT-3,666,631	c 14	N72-25413 *	US-PATENT-3,701,631	c 17	N73-12547 *	US-PATENT-3,735,591	c 25	N73-25760 *
US-PATENT-3,666,718	c 06	N72-25151 *	US-PATENT-3,701,894	c 07	N73-13149 *	US-PATENT-3,736,453	c 33	N77-22386 *
US-PATENT-3,666,741	c 06	N72-25150 *	US-PATENT-3,702,463	c 08	N73-13187 *	US-PATENT-3,736,607	c 02	N73-26006 *

US-PATENT-3,736,764	c 05	N73-26071 *	US-PATENT-3,758,718	c 10	N73-32143 *	US-PATENT-3,784,499	c 27	N74-17283 *
US-PATENT-3,736,849	c 14	N73-26431 *	US-PATENT-3,758,741	c 15	N73-32358 *	US-PATENT-3,785,836	c 27	N82-29452 *
US-PATENT-3,736,938	c 05	N73-27062 *	US-PATENT-3,758,781	c 14	N73-32317 *	US-PATENT-3,787,859	c 37	N74-18128 *
US-PATENT-3,736,956	c 15	N73-26472 *	US-PATENT-3,758,877	c 16	N73-32391 *	US-PATENT-3,788,163	c 37	N74-18127 *
US-PATENT-3,737,117	c 31	N73-26876 *	US-PATENT-3,759,152	c 14	N73-32319 *	US-PATENT-3,789,654	c 25	N74-18551 *
US-PATENT-3,737,118	c 15	N73-25513 *	US-PATENT-3,759,249	c 05	N73-32015 *	US-PATENT-3,789,920	c 34	N74-18552 *
US-PATENT-3,737,121	c 02	N73-26005 *	US-PATENT-3,759,443	c 28	N73-32606 *	US-PATENT-3,789,947	c 37	N74-18125 *
US-PATENT-3,737,181	c 33	N73-26958 *	US-PATENT-3,759,588	c 15	N73-32359 *	US-PATENT-3,790,037	c 54	N74-17853 *
US-PATENT-3,737,217	c 05	N73-26072 *	US-PATENT-3,759,672	c 14	N73-32320 *	US-PATENT-3,790,347	c 37	N74-18123 *
US-PATENT-3,737,231	c 07	N73-26119 *	US-PATENT-3,759,746	c 09	N73-32108 *	US-PATENT-3,790,409	c 44	N74-19693 *
US-PATENT-3,737,237	c 26	N73-26751 *	US-PATENT-3,759,747	c 44	N74-19692 *	US-PATENT-3,790,432	c 37	N74-18126 *
US-PATENT-3,737,639	c 10	N73-26230 *	US-PATENT-3,759,787	c 22	N73-32528 *	US-PATENT-3,790,650	c 31	N74-18124 *
US-PATENT-3,737,676	c 10	N73-26229 *	US-PATENT-3,760,239	c 09	N73-32112 *	US-PATENT-3,790,795	c 35	N74-18088 *
US-PATENT-3,737,757	c 10	N73-26228 *	US-PATENT-3,760,248	c 10	N73-32145 *	US-PATENT-3,790,906	c 33	N74-17927 *
US-PATENT-3,737,762	c 14	N73-28486 *	US-PATENT-3,760,257	c 09	N73-32109 *	US-PATENT-3,791,207	c 09	N74-17955 *
US-PATENT-3,737,776	c 07	N73-26118 *	US-PATENT-3,760,268	c 14	N73-32318 *	US-PATENT-3,792,399	c 33	N74-17928 *
US-PATENT-3,737,781	c 10	N73-25241 *	US-PATENT-3,760,394	c 10	N73-32144 *	US-PATENT-3,793,109	c 31	N74-18089 *
US-PATENT-3,737,815	c 09	N73-26195 *	US-PATENT-3,762,884	c 17	N73-32414 *	US-PATENT-3,795,134	c 09	N74-19528 *
US-PATENT-3,737,824	c 26	N73-26752 *	US-PATENT-3,762,918	c 17	N73-32415 *	US-PATENT-3,795,448	c 72	N74-19310 *
US-PATENT-3,737,905	c 14	N73-26432 *	US-PATENT-3,763,204	c 06	N73-32030 *	US-PATENT-3,795,840	c 33	N74-17929 *
US-PATENT-3,737,912	c 07	N73-26117 *	US-PATENT-3,763,552	c 26	N73-32571 *	US-PATENT-3,795,858	c 35	N74-18090 *
US-PATENT-3,739,846	c 04	N76-26175 *	US-PATENT-3,763,691	c 14	N73-32327 *	US-PATENT-3,795,862	c 33	N74-17930 *
US-PATENT-3,740,671	c 10	N73-27171 *	US-PATENT-3,763,708	c 35	N74-18323 *	US-PATENT-3,795,900	c 35	N74-17885 *
US-PATENT-3,740,725	c 08	N73-26176 *	US-PATENT-3,763,740	c 11	N73-32152 *	US-PATENT-3,795,910	c 44	N74-19870 *
US-PATENT-3,741,001	c 14	N73-27376 *	US-PATENT-3,763,928	c 33	N73-32818 *	US-PATENT-3,796,473	c 37	N74-20063 *
US-PATENT-3,742,316	c 09	N73-27150 *	US-PATENT-3,764,097	c 02	N74-10034 *	US-PATENT-3,796,592	c 24	N74-19769 *
US-PATENT-3,744,128	c 09	N73-28083 *	US-PATENT-3,764,209	c 14	N73-33361 *	US-PATENT-3,797,098	c 37	N74-21057 *
US-PATENT-3,744,148	c 14	N73-28489 *	US-PATENT-3,764,220	c 16	N73-33387 *	US-PATENT-3,797,919	c 70	N74-21300 *
US-PATENT-3,744,247	c 28	N73-27699 *	US-PATENT-3,764,790	c 33	N74-10223 *	US-PATENT-3,798,741	c 31	N74-21059 *
US-PATENT-3,744,294	c 14	N73-27379 *	US-PATENT-3,764,850	c 33	N74-10195 *	US-PATENT-3,798,748	c 37	N74-21055 *
US-PATENT-3,744,305	c 12	N73-28144 *	US-PATENT-3,764,933	c 33	N74-10184 *	US-PATENT-3,798,778	c 19	N74-21015 *
US-PATENT-3,744,320	c 14	N73-28487 *	US-PATENT-3,765,229	c 35	N74-10415 *	US-PATENT-3,798,896	c 37	N74-21060 *
US-PATENT-3,744,480	c 05	N73-27941 *	US-PATENT-3,765,858	c 26	N74-10521 *	US-PATENT-3,799,149	c 52	N74-20728 *
US-PATENT-3,744,510	c 15	N73-27406 *	US-PATENT-3,766,315	c 32	N74-10132 *	US-PATENT-3,799,475	c 02	N74-20646 *
US-PATENT-3,744,738	c 14	N73-27378 *	US-PATENT-3,766,380	c 35	N74-11284 *	US-PATENT-3,799,793	c 74	N74-20008 *
US-PATENT-3,744,739	c 15	N77-10112 *	US-PATENT-3,767,212	c 37	N74-10474 *	US-PATENT-3,799,813	c 76	N74-20329 *
US-PATENT-3,744,794	c 14	N73-27377 *	US-PATENT-3,769,544	c 31	N78-17238 *	US-PATENT-3,800,074	c 36	N74-20009 *
US-PATENT-3,744,812	c 16	N73-30476 *	US-PATENT-3,769,623	c 32	N74-11000 *	US-PATENT-3,800,082	c 71	N74-21014 *
US-PATENT-3,744,913	c 14	N73-28490 *	US-PATENT-3,769,689	c 37	N74-11301 *	US-PATENT-3,800,224	c 32	N74-19790 *
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US-PATENT-3,841,973	c 35	N75-12272 *	US-PATENT-3,882,846	c 05	N75-24716 *	US-PATENT-3,918,014	c 24	N76-14203 *
US-PATENT-3,842,485	c 37	N75-12326 *	US-PATENT-3,883,095	c 07	N75-24736 *	US-PATENT-3,919,710	c 33	N76-14372 *
US-PATENT-3,842,509	c 35	N75-12273 *	US-PATENT-3,883,215	c 35	N75-25124 *	US-PATENT-3,920,339	c 27	N76-14264 *
US-PATENT-3,842,656	c 76	N75-12810 *	US-PATENT-3,883,436	c 74	N75-25706 *	US-PATENT-3,920,413	c 44	N76-14595 *
US-PATENT-3,845,466	c 74	N81-19896 *	US-PATENT-3,883,689	c 35	N75-25123 *	US-PATENT-3,920,416	c 44	N76-18642 *
US-PATENT-3,846,243	c 25	N75-12086 *	US-PATENT-3,883,785	c 09	N75-24758 *	US-PATENT-3,922,930	c 37	N76-15457 *
US-PATENT-3,847,115	c 31	N75-12161 *	US-PATENT-3,883,812	c 33	N75-25041 *	US-PATENT-3,923,166	c 37	N76-15460 *
US-PATENT-3,847,141	c 35	N75-12271 *	US-PATENT-3,883,817	c 33	N75-25040 *	US-PATENT-3,924,068	c 32	N76-16249 *
US-PATENT-3,847,208	c 34	N75-12222 *	US-PATENT-3,883,872	c 32	N75-24982 *	US-PATENT-3,924,137	c 72	N76-15860 *
US-PATENT-3,847,652	c 25	N75-12087 *	US-PATENT-3,884,432	c 05	N75-25914 *	US-PATENT-3,924,164	c 33	N76-15373 *
US-PATENT-3,847,689	c 74	N75-12732 *	US-PATENT-3,884,765	c 35	N75-27330 *	US-PATENT-3,924,176	c 35	N76-16390 *
US-PATENT-3,848,190	c 35	N75-12270 *	US-PATENT-3,887,233	c 05	N75-25915 *	US-PATENT-3,924,183	c 33	N76-16331 *
US-PATENT-3,849,554	c 52	N75-15270 *	US-PATENT-3,887,345	c 35	N75-26334 *	US-PATENT-3,924,200	c 35	N76-15436 *
US-PATENT-3,849,668	c 54	N75-12616 *	US-PATENT-3,887,365	c 37	N75-26371 *	US-PATENT-3,924,237	c 32	N76-15330 *
US-PATENT-3,849,720	c 33	N77-26387 *	US-PATENT-3,888,362	c 54	N75-27758 *	US-PATENT-3,924,239	c 35	N76-15435 *
US-PATENT-3,849,865	c 37	N75-13261 *	US-PATENT-3,888,410	c 34	N75-26282 *	US-PATENT-3,924,267	c 35	N76-16391 *
US-PATENT-3,849,875	c 35	N75-13213 *	US-PATENT-3,888,561	c 35	N75-27328 *	US-PATENT-3,924,444	c 35	N76-15432 *
US-PATENT-3,849,877	c 24	N75-13032 *	US-PATENT-3,888,705	c 25	N75-26043 *	US-PATENT-3,925,104	c 35	N76-15434 *
US-PATENT-3,850,169	c 54	N75-13531 *	US-PATENT-3,889,064	c 32	N75-26195 *	US-PATENT-3,925,312	c 23	N76-15268 *
US-PATENT-3,850,388	c 05	N75-12930 *	US-PATENT-3,889,122	c 37	N75-26372 *	US-PATENT-3,926,482	c 37	N76-15461 *
US-PATENT-3,850,567	c 31	N75-13111 *	US-PATENT-3,889,155	c 33	N75-26244 *	US-PATENT-3,926,567	c 27	N76-15311 *
US-PATENT-3,850,754	c 51	N75-13502 *	US-PATENT-3,889,182	c 33	N75-26245 *	US-PATENT-3,927,227	c 12	N76-15189 *
US-PATENT-3,851,162	c 60	N75-13539 *	US-PATENT-3,889,185	c 33	N75-26246 *	US-PATENT-3,927,324	c 35	N76-15433 *
US-PATENT-3,851,238	c 33	N75-13139 *	US-PATENT-3,889,264	c 32	N75-26194 *	US-PATENT-3,927,408	c 32	N76-15329 *
US-PATENT-3,851,250	c 15	N75-13007 *	US-PATENT-3,891,311	c 54	N75-27759 *	US-PATENT-3,928,708	c 27	N76-16230 *
US-PATENT-3,853,003	c 09	N75-12969 *	US-PATENT-3,891,452	c 27	N75-27160 *	US-PATENT-3,929,119	c 75	N76-17951 *
US-PATENT-3,853,075	c 09	N75-12968 *	US-PATENT-3,891,533	c 33	N75-27252 *	US-PATENT-3,929,305	c 34	N76-17317 *
US-PATENT-3,854,097	c 75	N75-13625 *	US-PATENT-3,891,848	c 45	N75-27585 *	US-PATENT-3,929,306	c 18	N76-17185 *
US-PATENT-3,854,113	c 37	N75-13265 *	US-PATENT-3,891,851	c 35	N75-27331 *	US-PATENT-3,929,364	c 35	N76-16392 *
US-PATENT-3,855,873	c 37	N75-13266 *	US-PATENT-3,893,449	c 54	N75-27760 *	US-PATENT-3,930,628	c 02	N76-16014 *
US-PATENT-3,856,042	c 37	N75-15050 *	US-PATENT-3,893,458	c 54	N75-27761 *	US-PATENT-3,930,735	c 66	N76-19888 *
US-PATENT-3,856,402	c 36	N75-15028 *	US-PATENT-3,893,573	c 18	N75-27041 *	US-PATENT-3,931,132	c 27	N76-16228 *

US-PATENT-3,931,447	c 27	N76-16229 *	US-PATENT-3,971,915	c 35	N76-29552 *	US-PATENT-4,011,719	c 20	N77-20162 *
US-PATENT-3,931,458	c 33	N76-16332 *	US-PATENT-3,971,930	c 74	N76-30053 *	US-PATENT-4,011,756	c 35	N77-20400 *
US-PATENT-3,931,462	c 45	N76-16556 *	US-PATENT-3,971,940	c 35	N76-29551 *	US-PATENT-4,011,854	c 35	N77-20401 *
US-PATENT-3,931,516	c 35	N76-16393 *	US-PATENT-3,972,008	c 36	N76-29575 *	US-PATENT-4,012,018	c 35	N77-20399 *
US-PATENT-3,931,532	c 44	N76-16612 *	US-PATENT-3,972,038	c 17	N76-29347 *	US-PATENT-4,012,123	c 74	N77-20882 *
US-PATENT-3,932,262	c 25	N79-10163 *	US-PATENT-3,972,651	c 44	N76-29701 *	US-PATENT-4,012,237	c 26	N77-20201 *
US-PATENT-3,938,927	c 37	N76-19437 *	US-PATENT-3,972,727	c 44	N76-29699 *	US-PATENT-4,012,696	c 32	N77-20289 *
US-PATENT-3,937,055	c 37	N76-18454 *	US-PATENT-3,976,997	c 62	N76-31946 *	US-PATENT-4,014,745	c 51	N77-22794 *
US-PATENT-3,937,212	c 33	N76-19338 *	US-PATENT-3,977,147	c 39	N76-31562 *	US-PATENT-4,014,798	c 25	N81-17187 *
US-PATENT-3,937,215	c 52	N76-19785 *	US-PATENT-3,977,197	c 44	N76-31687 *	US-PATENT-4,017,959	c 37	N77-23482 *
US-PATENT-3,937,387	c 37	N76-18455 *	US-PATENT-3,977,231	c 35	N76-31489 *	US-PATENT-4,018,080	c 35	N77-22450 *
US-PATENT-3,937,533	c 37	N76-18459 *	US-PATENT-3,977,771	c 74	N76-31998 *	US-PATENT-4,018,085	c 35	N77-22449 *
US-PATENT-3,937,555	c 35	N76-18402 *	US-PATENT-3,977,787	c 35	N76-31490 *	US-PATENT-4,018,092	c 37	N77-22482 *
US-PATENT-3,937,661	c 37	N76-18456 *	US-PATENT-3,977,831	c 45	N76-31714 *	US-PATENT-4,018,409	c 37	N77-23483 *
US-PATENT-3,937,945	c 74	N76-18913 *	US-PATENT-3,978,187	c 37	N76-31524 *	US-PATENT-4,018,423	c 54	N77-21844 *
US-PATENT-3,938,035	c 33	N76-19339 *	US-PATENT-3,978,287	c 32	N76-31372 *	US-PATENT-4,018,532	c 74	N77-22951 *
US-PATENT-3,938,037	c 26	N76-18257 *	US-PATENT-3,978,360	c 33	N76-31409 *	US-PATENT-4,018,533	c 74	N77-22950 *
US-PATENT-3,938,162	c 32	N76-18295 *	US-PATENT-3,978,364	c 31	N76-31365 *	US-PATENT-4,018,649	c 51	N77-25769 *
US-PATENT-3,938,182	c 33	N76-18353 *	US-PATENT-3,978,410	c 03	N76-32140 *	US-PATENT-4,018,971	c 44	N77-22606 *
US-PATENT-3,938,188	c 33	N76-18345 *	US-PATENT-3,978,417	c 36	N76-31512 *	US-PATENT-4,018,979	c 32	N77-21267 *
US-PATENT-3,938,367	c 35	N76-18401 *	US-PATENT-3,978,490	c 33	N76-32457 *	US-PATENT-4,019,868	c 44	N77-22607 *
US-PATENT-3,938,373	c 35	N76-18400 *	US-PATENT-3,982,910	c 44	N77-10636 *	US-PATENT-4,020,632	c 07	N77-23106 *
US-PATENT-3,938,742	c 07	N76-18117 *	US-PATENT-3,983,695	c 20	N77-10148 *	US-PATENT-4,023,266	c 33	N77-26385 *
US-PATENT-3,938,892	c 74	N76-19935 *	US-PATENT-3,983,714	c 31	N77-10229 *	US-PATENT-4,025,327	c 35	N77-24455 *
US-PATENT-3,938,896	c 35	N76-18403 *	US-PATENT-3,983,749	c 09	N77-10071 *	US-PATENT-4,025,783	c 74	N77-26942 *
US-PATENT-3,938,048	c 37	N76-18458 *	US-PATENT-3,983,753	c 52	N77-10780 *	US-PATENT-4,025,866	c 33	N77-24375 *
US-PATENT-3,939,439	c 36	N76-18428 *	US-PATENT-3,983,780	c 28	N77-10213 *	US-PATENT-4,025,875	c 36	N77-25499 *
US-PATENT-3,940,097	c 34	N76-18364 *	US-PATENT-3,983,933	c 34	N77-10463 *	US-PATENT-4,025,876	c 71	N77-26919 *
US-PATENT-3,940,621	c 34	N76-18374 *	US-PATENT-3,984,070	c 02	N77-10091 *	US-PATENT-4,025,891	c 35	N77-24454 *
US-PATENT-3,941,355	c 37	N76-19436 *	US-PATENT-3,984,072	c 15	N77-10113 *	US-PATENT-4,025,950	c 32	N77-24328 *
US-PATENT-3,942,398	c 74	N76-20480 *	US-PATENT-3,984,256	c 44	N77-10635 *	US-PATENT-4,025,964	c 52	N77-25772 *
US-PATENT-3,943,368	c 37	N76-20958 *	US-PATENT-3,984,634	c 32	N77-10392 *	US-PATENT-4,026,527	c 34	N77-24423 *
US-PATENT-3,943,442	c 76	N76-20994 *	US-PATENT-3,984,671	c 43	N77-10584 *	US-PATENT-4,026,655	c 36	N77-25501 *
US-PATENT-3,943,763	c 04	N76-20114 *	US-PATENT-3,984,681	c 35	N77-10492 *	US-PATENT-4,027,212	c 33	N77-26386 *
US-PATENT-3,944,485	c 25	N81-19244 *	US-PATENT-3,984,685	c 47	N77-10753 *	US-PATENT-4,027,265	c 32	N77-24331 *
US-PATENT-3,945,801	c 45	N76-21742 *	US-PATENT-3,984,686	c 35	N77-10493 *	US-PATENT-4,027,273	c 36	N77-25502 *
US-PATENT-3,945,879	c 37	N76-21554 *	US-PATENT-3,984,730	c 33	N77-10429 *	US-PATENT-4,027,494	c 35	N78-12390 *
US-PATENT-3,947,281	c 27	N82-29455 *	US-PATENT-3,984,799	c 33	N77-10428 *	US-PATENT-4,027,524	c 09	N77-27131 *
US-PATENT-3,947,933	c 20	N76-21276 *	US-PATENT-3,985,454	c 74	N77-10899 *	US-PATENT-4,028,939	c 34	N77-27345 *
US-PATENT-3,948,102	c 33	N76-21390 *	US-PATENT-3,987,830	c 37	N77-12402 *	US-PATENT-4,029,470	c 51	N77-27677 *
US-PATENT-3,948,470	c 20	N76-21275 *	US-PATENT-3,988,561	c 37	N77-11397 *	US-PATENT-4,029,500	c 24	N77-27187 *
US-PATENT-3,949,206	c 32	N76-21366 *	US-PATENT-3,988,677	c 32	N77-12240 *	US-PATENT-4,029,838	c 24	N77-27188 *
US-PATENT-3,949,400	c 17	N76-21250 *	US-PATENT-3,988,716	c 60	N77-12721 *	US-PATENT-4,030,047	c 35	N77-27366 *
US-PATENT-3,949,404	c 32	N76-21365 *	US-PATENT-3,988,729	c 32	N77-12239 *	US-PATENT-4,030,348	c 39	N78-10493 *
US-PATENT-3,950,729	c 60	N76-21914 *	US-PATENT-3,988,933	c 35	N77-18385 *	US-PATENT-4,031,389	c 36	N77-26477 *
US-PATENT-3,951,129	c 44	N76-22657 *	US-PATENT-3,989,136	c 37	N77-19457 *	US-PATENT-4,032,089	c 24	N77-28225 *
US-PATENT-3,952,083	c 27	N76-22376 *	US-PATENT-3,989,206	c 09	N77-19076 *	US-PATENT-4,032,089	c 27	N81-14077 *
US-PATENT-3,952,590	c 09	N76-23273 *	US-PATENT-3,989,541	c 44	N77-19571 *	US-PATENT-4,033,119	c 07	N77-28118 *
US-PATENT-3,952,971	c 02	N76-22154 *	US-PATENT-3,989,602	c 24	N77-19171 *	US-PATENT-4,033,133	c 28	N80-10374 *
US-PATENT-3,952,976	c 37	N76-22540 *	US-PATENT-3,990,049	c 60	N77-19760 *	US-PATENT-4,033,182	c 39	N77-28511 *
US-PATENT-3,952,980	c 19	N76-22284 *	US-PATENT-3,990,860	c 27	N77-13217 *	US-PATENT-4,033,286	c 25	N79-28253 *
US-PATENT-3,952,998	c 20	N76-22296 *	US-PATENT-3,990,987	c 37	N77-13418 *	US-PATENT-4,033,316	c 33	N77-28385 *
US-PATENT-3,953,038	c 37	N76-22541 *	US-PATENT-3,994,128	c 07	N77-14025 *	US-PATENT-4,033,334	c 52	N77-28717 *
US-PATENT-3,953,343	c 24	N76-22309 *	US-PATENT-3,995,324	c 52	N77-14735 *	US-PATENT-4,033,349	c 52	N77-28718 *
US-PATENT-3,953,646	c 27	N76-22377 *	US-PATENT-3,995,476	c 35	N77-14407 *	US-PATENT-4,033,479	c 37	N77-28487 *
US-PATENT-3,953,674	c 17	N76-22245 *	US-PATENT-3,995,522	c 37	N77-14478 *	US-PATENT-4,033,503	c 26	N77-29260 *
US-PATENT-3,953,734	c 25	N76-22323 *	US-PATENT-3,995,621	c 52	N77-14736 *	US-PATENT-4,033,504	c 26	N77-28265 *
US-PATENT-3,953,792	c 35	N76-22509 *	US-PATENT-3,995,644	c 52	N77-14738 *	US-PATENT-4,033,705	c 07	N77-27116 *
US-PATENT-3,955,034	c 27	N76-23426 *	US-PATENT-3,995,789	c 37	N77-14479 *	US-PATENT-4,033,882	c 32	N77-28346 *
US-PATENT-3,955,941	c 44	N76-29700 *	US-PATENT-3,995,877	c 37	N77-14477 *	US-PATENT-4,035,037	c 37	N77-28486 *
US-PATENT-3,956,032	c 76	N76-25049 *	US-PATENT-3,995,960	c 35	N77-14411 *	US-PATENT-4,035,062	c 74	N77-28932 *
US-PATENT-3,956,050	c 37	N76-24575 *	US-PATENT-3,996,064	c 44	N77-14581 *	US-PATENT-4,035,065	c 74	N77-28933 *
US-PATENT-3,956,233	c 27	N76-24405 *	US-PATENT-3,996,067	c 44	N77-14580 *	US-PATENT-4,038,705	c 54	N77-30749 *
US-PATENT-3,956,833	c 09	N76-24280 *	US-PATENT-3,996,070	c 35	N77-14409 *	US-PATENT-4,039,489	c 27	N77-31308 *
US-PATENT-3,956,819	c 35	N76-24523 *	US-PATENT-3,996,455	c 60	N77-14751 *	US-PATENT-4,039,946	c 35	N77-30436 *
US-PATENT-3,956,932	c 35	N76-24524 *	US-PATENT-3,996,462	c 33	N77-14335 *	US-PATENT-4,039,000	c 34	N77-30399 *
US-PATENT-3,957,030	c 44	N76-23875 *	US-PATENT-3,996,464	c 35	N77-14406 *	US-PATENT-4,039,347	c 27	N77-30237 *
US-PATENT-3,957,037	c 35	N76-24525 *	US-PATENT-3,996,468	c 35	N77-14408 *	US-PATENT-4,039,754	c 32	N77-30309 *
US-PATENT-3,957,044	c 54	N76-24900 *	US-PATENT-3,996,471	c 52	N77-14737 *	US-PATENT-4,039,925	c 33	N77-30365 *
US-PATENT-3,957,104	c 37	N76-23570 *	US-PATENT-3,996,506	c 33	N77-14333 *	US-PATENT-4,040,041	c 33	N77-31404 *
US-PATENT-3,957,675	c 24	N76-24363 *	US-PATENT-3,996,532	c 32	N77-14292 *	US-PATENT-4,040,750	c 35	N77-31465 *
US-PATENT-3,958,188	c 36	N76-24553 *	US-PATENT-3,997,848	c 33	N77-14334 *	US-PATENT-4,040,887	c 44	N77-31601 *
US-PATENT-3,958,238	c 60	N76-23850 *	US-PATENT-3,999,886	c 05	N77-17029 *	US-PATENT-4,040,940	c 37	N80-14397 *
US-PATENT-3,958,553	c 44	N76-24696 *	US-PATENT-4,049,930	c 33	N78-10375 *	US-PATENT-4,041,233	c 27	N77-30236 *
US-PATENT-3,961,997	c 44	N76-28635 *	US-PATENT-4,356,157	c 25	N83-33977 *	US-PATENT-4,041,391	c 32	N77-30308 *
US-PATENT-3,964,306	c 34	N76-27517 *	US-PATENT-4,359,503	c 24	N83-33950 *	US-PATENT-4,041,697	c 37	N78-10467 *
US-PATENT-3,964,319	c 07	N76-27232 *	US-PATENT-4,000,682	c 20	N77-17143 *	US-PATENT-4,041,910	c 37	N77-31497 *
US-PATENT-3,964,813	c 37	N76-27567 *	US-PATENT-4,000,929	c 37	N77-17464 *	US-PATENT-4,042,926	c 32	N77-31350 *
US-PATENT-3,964,902	c 34	N76-27515 *	US-PATENT-4,001,552	c 38	N77-17495 *	US-PATENT-4,043,668	c 35	N84-33766 *
US-PATENT-3,964,928	c 44	N76-27664 *	US-PATENT-4,001,602	c 33	N77-17354 *	US-PATENT-4,043,674	c 36	N77-32478 *
US-PATENT-3,965,096	c 27	N76-32315 *	US-PATENT-4,003,004	c 33	N77-17351 *	US-PATENT-4,044,753	c 44	N77-32582 *
US-PATENT-3,965,354	c 33	N76-27473 *	US-PATENT-4,003,084	c 35	N77-17426 *	US-PATENT-4,044,821	c 44	N77-32581 *
US-PATENT-3,965,475	c 33	N76-27472 *	US-PATENT-4,003,257	c 23	N77-17161 *	US-PATENT-4,045,063	c 37	N77-32499 *
US-PATENT-3,966,499	c 44	N76-31666 *	US-PATENT-4,004,292	c 74	N77-18893 *	US-PATENT-4,045,149	c 07	N77-32148 *
US-PATENT-3,966,547	c 25	N76-27383 *	US-PATENT-4,005,574	c 07	N77-17059 *	US-PATENT-4,045,247	c 35	N77-32454 *
US-PATENT-3,967,091	c 37	N76-27568 *	US-PATENT-4,006,631	c 04	N77-19056 *	US-PATENT-4,045,255	c 26	N77-32279 *
US-PATENT-3,971,230	c 37	N76-29590 *	US-PATENT-4,006,999	c 24	N77-19170 *	US-PATENT-4,045,315	c 44	N77-32580 *
US-PATENT-3,971,256	c 81	N76-30131 *	US-PATENT-4,007,430	c 36	N77-19416 *	US-PATENT-4,045,359	c 25	N77-32255 *
US-PATENT-3,971,362	c 52	N76-29894 *	US-PATENT-4,007,434	c 32	N77-18307 *	US-PATENT-4,045,728	c 35	N77-32455 *
US-PATENT-3,971,363	c 52	N76-29895 *	US-PATENT-4,007,601	c 34	N77-19353 *	US-PATENT-4,045,792	c 60	N77-32731 *
US-PATENT-3,971,364	c 52	N76-29896 *	US-PATENT-4,007,623	c 35	N77-18417 *	US-PATENT-4,045,795	c 32	N77-32342 *
US-PATENT-3,971,535	c 05	N76-29217 *	US-PATENT-4,007,891	c 07	N77-18154 *	US-PATENT-4,046,012	c 35	N77-32456 *
US-PATENT-3,971,602	c 37	N76-29588 *	US-PATENT-4,008,348	c 34	N77-18382 *	US-PATENT-4,046,190	c 34	N77-32413 *
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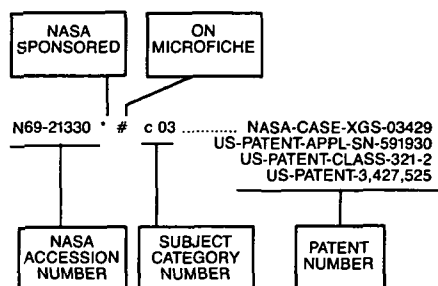
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N71-17586*	c 14	NASA-CASE-XLA-08646			US-PATENT-3,534,479				US-PATENT-CLASS-264-27
		US-PATENT-APPL-SN-677476	N71-17658*	c 14	NASA-CASE-XMF-04966		N71-17822*	c 15	US-PATENT-3,274,304
		US-PATENT-CLASS-73-105			US-PATENT-APPL-SN-727480				NASA-CASE-ARC-10009-1
		US-PATENT-3,534,596			US-PATENT-CLASS-33-174				US-PATENT-APPL-SN-714595
N71-17587*	c 14	NASA-CASE-XMF-05844			US-PATENT-3,534,480				US-PATENT-CLASS-324-58.5
		US-PATENT-APPL-SN-706564	N71-17659*	c 14	NASA-CASE-XMF-02964		N71-17897*	c 33	US-PATENT-3,532,973
		US-PATENT-CLASS-73-382			US-PATENT-APPL-SN-493942				NASA-CASE-XLA-00892
		US-PATENT-3,500,688			US-PATENT-CLASS-73-15.4				US-PATENT-APPL-SN-245941
N71-17588*	c 14	NASA-CASE-MFS-12806	N71-17661*	c 12	US-PATENT-3,465,569				US-PATENT-CLASS-62-467
		US-PATENT-APPL-SN-686933			NASA-CASE-NPO-10298				US-PATENT-3,273,355
		US-PATENT-CLASS-55-179			US-PATENT-APPL-SN-745852		N71-18064*	c 26	NASA-CASE-XNP-01328
		US-PATENT-3,490,205			US-PATENT-CLASS-137-341				US-PATENT-APPL-SN-296879
N71-17599*	c 05	NASA-CASE-MSC-12206-1	N71-17662*	c 14	US-PATENT-3,534,765				US-PATENT-CLASS-317-234
		US-PATENT-APPL-SN-856258			NASA-CASE-NPO-10300				US-PATENT-3,271,637
		US-PATENT-CLASS-128-142.5			US-PATENT-APPL-SN-718769		N71-18132*	c 15	NASA-CASE-MFS-13686
		US-PATENT-3,516,404			US-PATENT-CLASS-350-285				US-PATENT-APPL-SN-716183
N71-17600*	c 11	NASA-CASE-MFS-12915			US-PATENT-3,535,024				US-PATENT-CLASS-73-67.2
		US-PATENT-APPL-SN-694340	N71-17679*	c 31	NASA-CASE-XNP-02507		N71-18465*	c 14	US-PATENT-3,531,982
		US-PATENT-CLASS-220-89			US-PATENT-APPL-SN-475299				NASA-CASE-NPO-10174
		US-PATENT-3,469,734			US-PATENT-CLASS-244-1				US-PATENT-APPL-SN-690163
N71-17609*	c 32	NASA-CASE-XLA-02332			US-PATENT-3,310,256				US-PATENT-CLASS-95-11
		US-PATENT-APPL-SN-388024	N71-17680*	c 31	NASA-CASE-XLA-00117		N71-18481*	c 14	US-PATENT-3,520,238
		US-PATENT-CLASS-212-11			US-PATENT-APPL-SN-835153				NASA-CASE-XLA-02758
		US-PATENT-3,276,602			US-PATENT-CLASS-220-1				US-PATENT-APPL-SN-759665
N71-17610*	c 33	NASA-CASE-XLA-00377			US-PATENT-2,996,212				US-PATENT-CLASS-73-4

N71-18482*	c 14	US-PATENT-3,531,978 NASA-CASE-XLA-07424 US-PATENT-APPL-SN-635326 US-PATENT-CLASS-313-7 US-PATENT-3,466,484	N71-18699*	c 14	US-PATENT-3,507,706 NASA-CASE-XLA-03273 US-PATENT-APPL-SN-487352 US-PATENT-CLASS-250-83.3 US-PATENT-3,458,702	N71-19433*	c 07	US-PATENT-3,517,318 NASA-CASE-MFS-13046 US-PATENT-APPL-SN-673228 US-PATENT-CLASS-178-6 US-PATENT-3,532,807
N71-18483*	c 14	NASA-CASE-XER-09519 US-PATENT-APPL-SN-676375 US-PATENT-CLASS-55-208 US-PATENT-3,469,375	N71-18701*	c 15	NASA-CASE-XMF-07587 US-PATENT-APPL-SN-649359 US-PATENT-CLASS-317-122 US-PATENT-3,448,346	N71-19435*	c 08	NASA-CASE-XGS-02612 US-PATENT-APPL-SN-502743 US-PATENT-CLASS-340-347 US-PATENT-3,509,558
N71-18578*	c 11	NASA-CASE-XAC-05902 US-PATENT-APPL-SN-662828 US-PATENT-CLASS-89-8 US-PATENT-3,465,638	N71-18720*	c 09	NASA-CASE-MSC-12101 US-PATENT-APPL-SN-763705 US-PATENT-CLASS-343-718 US-PATENT-3,509,570	N71-19436*	c 07	NASA-CASE-XMF-09422 US-PATENT-APPL-SN-783378 US-PATENT-CLASS-174-35 US-PATENT-3,517,109
N71-18579*	c 15	NASA-CASE-XGS-04175 US-PATENT-APPL-SN-606464 US-PATENT-CLASS-72-364 US-PATENT-3,465,567	N71-18721*	c 09	NASA-CASE-XER-07894 US-PATENT-APPL-SN-644444 US-PATENT-CLASS-331-107 US-PATENT-3,509,491	N71-19437*	c 08	NASA-CASE-XGS-04768 US-PATENT-APPL-SN-598119 US-PATENT-CLASS-235-158 US-PATENT-3,508,039
N71-18580*	c 15	NASA-CASE-XNP-09698 US-PATENT-APPL-SN-698592 US-PATENT-CLASS-138-4 US-PATENT-CLASS-138-45 US-PATENT-CLASS-251-118 US-PATENT-CLASS-251-121 US-PATENT-3,532,128	N71-18722*	c 10	NASA-CASE-ERC-10046 US-PATENT-APPL-SN-793772 US-PATENT-CLASS-343-100 US-PATENT-3,501,764	N71-19438*	c 03	NASA-CASE-XGS-05432 US-PATENT-APPL-SN-549860 US-PATENT-CLASS-320-23 US-PATENT-3,426,263
N71-18594*	c 08	NASA-CASE-XAC-04031 US-PATENT-APPL-SN-538905 US-PATENT-CLASS-340-347 US-PATENT-3,533,098	N71-18723*	c 10	NASA-CASE-XNP-09450 US-PATENT-APPL-SN-640459 US-PATENT-CLASS-307-273 US-PATENT-3,501,649	N71-19439*	c 05	NASA-CASE-XMS-09571 US-PATENT-APPL-SN-678700 US-PATENT-CLASS-165-46 US-PATENT-3,425,487
N71-18595*	c 08	NASA-CASE-XGS-03303 US-PATENT-APPL-SN-520838 US-PATENT-CLASS-340-174 US-PATENT-3,501,752	N71-18724*	c 10	NASA-CASE-XLA-09371 US-PATENT-APPL-SN-568160 US-PATENT-CLASS-318-257 US-PATENT-3,504,258	N71-19440*	c 05	NASA-CASE-XMS-01177 US-PATENT-APPL-SN-516150 US-PATENT-CLASS-250-83 US-PATENT-3,427,454
N71-18598*	c 09	NASA-CASE-NPO-10066 US-PATENT-APPL-SN-681693 US-PATENT-CLASS-343-13 US-PATENT-3,447,155	N71-18751*	c 08	NASA-CASE-XLA-07732 US-PATENT-APPL-SN-641441 US-PATENT-CLASS-307-218 US-PATENT-3,512,009	N71-19466*	c 09	NASA-CASE-XGS-02812 US-PATENT-APPL-SN-502750 US-PATENT-CLASS-330-30 US-PATENT-3,466,560
N71-18599*	c 09	NASA-CASE-LAR-10372 US-PATENT-APPL-SN-730162 US-PATENT-CLASS-102-70.2 US-PATENT-3,500,747	N71-18752*	c 08	NASA-CASE-XMF-00663 US-PATENT-APPL-SN-205470 US-PATENT-CLASS-321-5 US-PATENT-3,521,143	N71-19467*	c 10	NASA-CASE-XMF-08665 US-PATENT-APPL-SN-582609 US-PATENT-CLASS-325-63 US-PATENT-3,470,475
N71-18600*	c 09	NASA-CASE-MSC-12168-1 US-PATENT-APPL-SN-640154 US-PATENT-CLASS-312-296 US-PATENT-3,447,850	N71-18772*	c 10	NASA-CASE-GSC-10366-1 US-PATENT-APPL-SN-771523 US-PATENT-CLASS-318-138 US-PATENT-3,532,948	N71-19468*	c 10	NASA-CASE-XMS-05605-1 US-PATENT-APPL-SN-764812 US-PATENT-CLASS-178-69.5 US-PATENT-3,532,819
N71-18602*	c 08	NASA-CASE-XGS-04766 US-PATENT-APPL-SN-598120 US-PATENT-CLASS-235-175 US-PATENT-3,532,866	N71-18830*	c 09	NASA-CASE-XAC-10768 US-PATENT-APPL-SN-711970 US-PATENT-CLASS-250-83 US-PATENT-3,508,053	N71-19469*	c 10	NASA-CASE-XNP-00777 US-PATENT-APPL-SN-486573 US-PATENT-CLASS-328-122 US-PATENT-3,517,268
N71-18603*	c 12	NASA-CASE-ERC-10031 US-PATENT-APPL-SN-741461 US-PATENT-CLASS-40-28 US-PATENT-3,516,185	N71-18843*	c 09	NASA-CASE-XNP-03263 US-PATENT-APPL-SN-506908 US-PATENT-CLASS-340-146.1 US-PATENT-3,501,743	N71-19470*	c 09	NASA-CASE-XGS-05289 US-PATENT-APPL-SN-632104 US-PATENT-CLASS-331-113 US-PATENT-3,470,496
N71-18611*	c 31	NASA-CASE-MFS-20400 US-PATENT-APPL-SN-551694 US-PATENT-CLASS-152-11 US-PATENT-3,493,027	N71-19212*	c 21	NASA-CASE-MFS-20386 US-PATENT-APPL-SN-818349 US-PATENT-CLASS-356-28 US-PATENT-3,532,427	N71-19471*	c 10	NASA-CASE-XLE-03804 US-PATENT-APPL-SN-526631 US-PATENT-CLASS-307-235 US-PATENT-3,463,939
N71-18613*	c 15	NASA-CASE-XNP-02588 US-PATENT-APPL-SN-563644 US-PATENT-CLASS-219-91 US-PATENT-3,466,418	N71-19213*	c 15	NASA-CASE-MFS-14259 US-PATENT-APPL-SN-787410 US-PATENT-CLASS-138-43 US-PATENT-3,536,103	N71-19472*	c 10	NASA-CASE-XAC-04030 US-PATENT-APPL-SN-520839 US-PATENT-CLASS-328-1 US-PATENT-3,464,016
N71-18614*	c 16	NASA-CASE-XGS-03644 US-PATENT-APPL-SN-505320 US-PATENT-CLASS-331-94.5 US-PATENT-3,517,328	N71-19214*	c 15	NASA-CASE-MFS-20410 US-PATENT-APPL-SN-819599 US-PATENT-CLASS-244-1 US-PATENT-3,534,926	N71-19479*	c 09	NASA-CASE-XMS-04300 US-PATENT-APPL-SN-516158 US-PATENT-CLASS-350-275 US-PATENT-3,427,093
N71-18615*	c 12	NASA-CASE-XNP-09704 US-PATENT-APPL-SN-730701 US-PATENT-CLASS-137-594 US-PATENT-CLASS-138-46 US-PATENT-CLASS-251-127 US-PATENT-CLASS-251-333 US-PATENT-CLASS-251-342 US-PATENT-CLASS-251-61.1 US-PATENT-3,532,118	N71-19287*	c 02	NASA-CASE-GSC-10087-1 US-PATENT-APPL-SN-701679 US-PATENT-CLASS-343-112 US-PATENT-3,534,367	N71-19480*	c 09	NASA-CASE-XFR-05637 US-PATENT-APPL-SN-484855 US-PATENT-CLASS-235-194 US-PATENT-3,423,579
N71-18616*	c 15	NASA-CASE-XLA-07390 US-PATENT-APPL-SN-665681 US-PATENT-CLASS-72-53 US-PATENT-3,531,964	N71-19288*	c 08	NASA-CASE-NPO-10068 US-PATENT-APPL-SN-668969 US-PATENT-CLASS-340-172.5 US-PATENT-3,501,750	N71-19485*	c 15	NASA-CASE-MSC-11010 US-PATENT-APPL-SN-605090 US-PATENT-CLASS-251-31 US-PATENT-3,447,774
N71-18625*	c 14	NASA-CASE-NPO-10175 US-PATENT-APPL-SN-685787 US-PATENT-CLASS-137-505.12 US-PATENT-3,443,583	N71-19417*	c 10	NASA-CASE-XMS-10984-1 US-PATENT-APPL-SN-605095 US-PATENT-CLASS-340-213.1 US-PATENT-3,533,093	N71-19486*	c 15	NASA-CASE-XMF-08522 US-PATENT-APPL-SN-640447 US-PATENT-CLASS-219-121 US-PATENT-3,474,220
N71-18692*	c 08	NASA-CASE-MFS-14322 US-PATENT-APPL-SN-646934 US-PATENT-CLASS-328-134 US-PATENT-3,501,701	N71-19418*	c 10	NASA-CASE-GSC-10041-1 US-PATENT-APPL-SN-684209 US-PATENT-CLASS-331-113 US-PATENT-3,458,833	N71-19489*	c 15	NASA-CASE-XMF-04680 US-PATENT-APPL-SN-634040 US-PATENT-CLASS-33-147 US-PATENT-3,425,131
N71-18693*	c 08	NASA-CASE-XGS-04765 US-PATENT-APPL-SN-577545 US-PATENT-CLASS-235-156 US-PATENT-3,508,036	N71-19420*	c 08	NASA-CASE-XNP-09453 US-PATENT-APPL-SN-640448 US-PATENT-CLASS-226-190 US-PATENT-3,507,436	N71-19493*	c 07	NASA-CASE-XKS-08485 US-PATENT-APPL-SN-649078 US-PATENT-CLASS-343-873 US-PATENT-3,509,578
N71-18694*	c 08	NASA-CASE-NPO-10201 US-PATENT-APPL-SN-691738 US-PATENT-CLASS-340-174 US-PATENT-3,509,551	N71-19421*	c 10	NASA-CASE-XLA-08493 US-PATENT-APPL-SN-749148 US-PATENT-CLASS-324-72 US-PATENT-3,532,975	N71-19494*	c 11	NASA-CASE-MFS-10555 US-PATENT-APPL-SN-700884 US-PATENT-CLASS-35-12 US-PATENT-3,516,179
N71-18698*	c 03	NASA-CASE-NPO-10373 US-PATENT-APPL-SN-718752 US-PATENT-CLASS-136-89	N71-19431*	c 14	NASA-CASE-XGS-02439 US-PATENT-APPL-SN-487341 US-PATENT-CLASS-324-120 US-PATENT-3,422,352	N71-19516*	c 09	NASA-CASE-XNP-06937 US-PATENT-APPL-SN-640449 US-PATENT-CLASS-330-30 US-PATENT-3,501,712
			N71-19432*	c 08	NASA-CASE-XGS-02440 US-PATENT-APPL-SN-655677 US-PATENT-CLASS-328-42	N71-19544*	c 08	NASA-CASE-XGS-01230 US-PATENT-APPL-SN-356488 US-PATENT-CLASS-340-347

N71-19545*	c 03	US-PATENT-3,474,441 NASA-CASE-NPO-10821 US-PATENT-APPL-SN-670814 US-PATENT-CLASS-136-89 US-PATENT-3,466,188	N71-20439*	c 14	US-PATENT-3,461,721 NASA-CASE-XAC-04886-1 US-PATENT-APPL-SN-574290 US-PATENT-CLASS-73-142 US-PATENT-3,425,272	N71-20742*	c 18	US-PATENT-3,360,980 NASA-CASE-XMS-02952 US-PATENT-APPL-SN-519160 US-PATENT-CLASS-55-158 US-PATENT-3,355,861
N71-19547*	c 10	NASA-CASE-XGS-03058 US-PATENT-APPL-SN-568987 US-PATENT-CLASS-307-289 US-PATENT-3,517,221	N71-20440*	c 15	NASA-CASE-XNP-09770 US-PATENT-APPL-SN-700120 US-PATENT-CLASS-209-10 US-PATENT-3,472,372	N71-20743*	c 17	NASA-CASE-XMF-02786 US-PATENT-APPL-SN-466873 US-PATENT-CLASS-75-142 US-PATENT-3,347,665
N71-19568*	c 14	NASA-CASE-MSC-10966 US-PATENT-APPL-SN-665676 US-PATENT-CLASS-250-203 US-PATENT-3,421,004	N71-20441*	c 15	NASA-CASE-XMS-06329-1 US-PATENT-APPL-SN-688742 US-PATENT-CLASS-73-141 US-PATENT-3,472,069	N71-20747*	c 25	NASA-CASE-XLE-02578 US-PATENT-APPL-SN-469012 US-PATENT-CLASS-313-271 US-PATENT-3,356,885
N71-19569*	c 15	NASA-CASE-XLA-05749 US-PATENT-APPL-SN-621714 US-PATENT-CLASS-137-582 US-PATENT-3,426,791	N71-20442*	c 14	NASA-CASE-MFS-11537 US-PATENT-APPL-SN-636878 US-PATENT-CLASS-23-254 US-PATENT-3,472,629	N71-20782*	c 10	NASA-CASE-XGS-01784 US-PATENT-APPL-SN-396444 US-PATENT-CLASS-250-206 US-PATENT-3,348,053
N71-19570*	c 15	NASA-CASE-XLE-05130-2 US-PATENT-APPL-SN-700586 US-PATENT-CLASS-277-25 US-PATENT-3,466,052	N71-20443*	c 15	NASA-CASE-MFS-07369 US-PATENT-APPL-SN-640462 US-PATENT-CLASS-29-492 US-PATENT-3,473,216	N71-20791*	c 07	NASA-CASE-XNP-05254 US-PATENT-APPL-SN-472372 US-PATENT-CLASS-325-31 US-PATENT-3,350,643
N71-19610*	c 09	NASA-CASE-NPO-10037 US-PATENT-APPL-SN-700987 US-PATENT-CLASS-200-152 US-PATENT-3,470,342	N71-20445*	c 09	NASA-CASE-XNP-09775 US-PATENT-APPL-SN-668247 US-PATENT-CLASS-333-96 US-PATENT-3,474,357	N71-20813*	c 15	NASA-CASE-XMS-02184 US-PATENT-APPL-SN-608247 US-PATENT-CLASS-248-27 US-PATENT-3,361,400
N71-19687*	c 08	NASA-CASE-XNP-04780 US-PATENT-APPL-SN-455477 US-PATENT-CLASS-340-347 US-PATENT-3,430,227	N71-20446*	c 09	NASA-CASE-XLE-04250 US-PATENT-APPL-SN-621098 US-PATENT-CLASS-310-54 US-PATENT-3,447,003	N71-20814*	c 07	NASA-CASE-XNP-01306 US-PATENT-APPL-SN-343426 US-PATENT-CLASS-179-15 US-PATENT-3,364,311
N71-19763*	c 08	NASA-CASE-XAC-06302 US-PATENT-APPL-SN-574284 US-PATENT-CLASS-325-60 US-PATENT-3,456,193	N71-20447*	c 09	NASA-CASE-XLA-02850 US-PATENT-APPL-SN-556784 US-PATENT-CLASS-307-267 US-PATENT-3,473,050	N71-20815*	c 12	NASA-CASE-XMF-01779 US-PATENT-APPL-SN-521999 US-PATENT-CLASS-346-1 US-PATENT-3,357,024
N71-19773*	c 07	NASA-CASE-GSC-10373-1 US-PATENT-APPL-SN-712658 US-PATENT-CLASS-325-4 US-PATENT-3,532,985	N71-20448*	c 10	NASA-CASE-XNP-03744 US-PATENT-APPL-SN-547677 US-PATENT-CLASS-318-314 US-PATENT-3,424,966	N71-20816*	c 09	NASA-CASE-XAC-01677 US-PATENT-APPL-SN-596338 US-PATENT-CLASS-73-147 US-PATENT-3,360,988
N71-19854*	c 07	NASA-CASE-GSC-10553-1 US-PATENT-APPL-SN-820963 US-PATENT-CLASS-343-100 US-PATENT-3,534,365	N71-20461*	c 14	NASA-CASE-XNP-09763 US-PATENT-APPL-SN-600682 US-PATENT-CLASS-117-6 US-PATENT-3,433,662	N71-20834*	c 33	NASA-CASE-XMS-02009 US-PATENT-APPL-SN-455352 US-PATENT-CLASS-141-5 US-PATENT-3,349,814
N71-20268*	c 05	NASA-CASE-XLA-02898 US-PATENT-APPL-SN-429932 US-PATENT-CLASS-128-1 US-PATENT-3,461,855	N71-20491*	c 03	NASA-CASE-XGS-05434 US-PATENT-APPL-SN-667636 US-PATENT-CLASS-136-182 US-PATENT-3,463,673	N71-20841*	c 10	NASA-CASE-XGS-01222 US-PATENT-APPL-SN-354182 US-PATENT-CLASS-325-305 US-PATENT-3,348,152
N71-20273*	c 03	NASA-CASE-NPO-10188 US-PATENT-APPL-SN-681687 US-PATENT-CLASS-244-1 US-PATENT-3,473,758	N71-20492*	c 03	NASA-CASE-XLE-04787 US-PATENT-APPL-SN-551846 US-PATENT-CLASS-136-89 US-PATENT-3,434,885	N71-20842*	c 09	NASA-CASE-XNP-05381 US-PATENT-APPL-SN-568352 US-PATENT-CLASS-338-82 US-PATENT-3,350,671
N71-20330*	c 28	NASA-CASE-XLE-103477-1 US-PATENT-APPL-SN-466390 US-PATENT-CLASS-60-39.36 US-PATENT-3,433,015	N71-20518*	c 24	NASA-CASE-XNP-02592 US-PATENT-APPL-SN-484490 US-PATENT-CLASS-324-33 US-PATENT-3,430,131	N71-20851*	c 09	NASA-CASE-XNP-04732 US-PATENT-APPL-SN-557584 US-PATENT-CLASS-339-177 US-PATENT-3,358,264
N71-20393*	c 15	NASA-CASE-MFS-06074 US-PATENT-APPL-SN-688743 US-PATENT-CLASS-228-9 US-PATENT-3,458,104	N71-20563*	c 25	NASA-CASE-XLA-06232 US-PATENT-APPL-SN-612740 US-PATENT-CLASS-324-58.5 US-PATENT-3,473,116	N71-20852*	c 10	NASA-CASE-XGS-03502 US-PATENT-APPL-SN-584066 US-PATENT-CLASS-331-17 US-PATENT-3,361,985
N71-20395*	c 15	NASA-CASE-XMF-06065 US-PATENT-APPL-SN-665679 US-PATENT-CLASS-219-275 US-PATENT-3,466,424	N71-20569*	c 09	NASA-CASE-XMS-08589-1 US-PATENT-APPL-SN-544899 US-PATENT-CLASS-324-57 US-PATENT-3,434,050	N71-20864*	c 09	NASA-CASE-XGS-03501 US-PATENT-APPL-SN-576521 US-PATENT-CLASS-343-16 US-PATENT-3,359,555
N71-20396*	c 31	NASA-CASE-XMF-08523 US-PATENT-APPL-SN-645563 US-PATENT-CLASS-244-1 US-PATENT-3,465,986	N71-20570*	c 02	NASA-CASE-XAC-08872 US-PATENT-APPL-SN-700174 US-PATENT-CLASS-244-76 US-PATENT-3,472,470	N71-20895*	c 03	NASA-CASE-XNP-00826 US-PATENT-APPL-SN-327163 US-PATENT-CLASS-136-89 US-PATENT-3,346,419
N71-20400*	c 16	NASA-CASE-MFS-11279 US-PATENT-APPL-SN-628094 US-PATENT-CLASS-219-121 US-PATENT-3,472,998	N71-20571*	c 08	NASA-CASE-XGS-04987 US-PATENT-APPL-SN-619908 US-PATENT-CLASS-315-24 US-PATENT-3,437,874	N71-20896*	c 12	NASA-CASE-XNP-02251 US-PATENT-APPL-SN-432030 US-PATENT-CLASS-321-48 US-PATENT-3,337,790
N71-20407*	c 03	NASA-CASE-NPO-10194 US-PATENT-APPL-SN-668249 US-PATENT-CLASS-136-182 US-PATENT-3,460,995	N71-20658*	c 09	NASA-CASE-XMS-03454 US-PATENT-APPL-SN-425363 US-PATENT-CLASS-343-915 US-PATENT-3,360,798	N71-20904*	c 03	NASA-CASE-XLE-01645 US-PATENT-APPL-SN-342574 US-PATENT-CLASS-136-86 US-PATENT-3,357,862
N71-20427*	c 14	NASA-CASE-XMS-13052 US-PATENT-APPL-SN-561223 US-PATENT-CLASS-62-268 US-PATENT-3,455,121	N71-20705*	c 09	NASA-CASE-XMF-01599 US-PATENT-APPL-SN-381840 US-PATENT-CLASS-117-212 US-PATENT-3,359,132	N71-20905*	c 06	NASA-CASE-XMF-02584 US-PATENT-APPL-SN-506135 US-PATENT-CLASS-260-2 US-PATENT-3,346,515
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N71-22910*	c 15	US-PATENT-CLASS-18-26	N71-22910*	c 09	US-PATENT-CLASS-307-288	N71-23055*	c 15	US-PATENT-CLASS-156-285
		US-PATENT-3,381,339			US-PATENT-3,374,366			US-PATENT-3,373,069
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		US-PATENT-CLASS-308-176			US-PATENT-CLASS-324-120			US-PATENT-CLASS-312-1
		US-PATENT-3,397,932			US-PATENT-3,384,820			US-PATENT-3,337,279
N71-22912*	c 28	NASA-CASE-XMF-06926	N71-22912*	c 15	NASA-CASE-XMS-01625	N71-23057*	c 28	NASA-CASE-XNP-02923
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N71-24042*	c 15	NASA-CASE-XNP-04731 US-PATENT-APPL-SN-534966 US-PATENT-CLASS-103-48 US-PATENT-3,367,271	N71-24597*	c 09	NASA-CASE-ARC-10132-1 US-PATENT-APPL-SN-759460 US-PATENT-CLASS-73-398 US-PATENT-3,545,275	N71-24695*	c 15	NASA-CASE-XNP-06936 US-PATENT-APPL-SN-640786 US-PATENT-CLASS-318-382 US-PATENT-3,487,281
N71-24043*	c 15	NASA-CASE-XKS-03338 US-PATENT-APPL-SN-547072 US-PATENT-CLASS-89-1.806 US-PATENT-3,415,156	N71-24599*	c 15	NASA-CASE-MS-12052-1 US-PATENT-APPL-SN-770371 US-PATENT-CLASS-254-150 US-PATENT-CLASS-254-173 US-PATENT-CLASS-254-186	N71-24696*	c 15	NASA-CASE-NPO-10173 US-PATENT-APPL-SN-796360 US-PATENT-CLASS-310-101 US-PATENT-3,535,570
N71-24044*	c 15	NASA-CASE-XMF-06888 US-PATENT-APPL-SN-591000 US-PATENT-CLASS-62-40 US-PATENT-3,415,069	N71-24600*	c 15	NASA-CASE-XGS-08718 US-PATENT-APPL-SN-785611 US-PATENT-CLASS-244-1 US-PATENT-CLASS-244-150 US-PATENT-CLASS-74-2 US-PATENT-CLASS-89-1.5 US-PATENT-CLASS-9-9 US-PATENT-3,540,676	N71-24717*	c 09	NASA-CASE-XMF-08804 US-PATENT-APPL-SN-683606 US-PATENT-CLASS-324-181 US-PATENT-3,543,159
N71-24045*	c 15	NASA-CASE-XGS-04548 US-PATENT-APPL-SN-672383 US-PATENT-CLASS-74-100 US-PATENT-3,460,397	N71-24605*	c 03	NASA-CASE-XNP-04758 US-PATENT-APPL-SN-557861 US-PATENT-CLASS-320-17 US-PATENT-3,413,536	N71-24718*	c 03	NASA-CASE-MS-10960-1 US-PATENT-APPL-SN-751198 US-PATENT-CLASS-204-305 US-PATENT-3,547,801
N71-24046*	c 15	NASA-CASE-XLE-10337 US-PATENT-APPL-SN-594633 US-PATENT-CLASS-252-26 US-PATENT-3,391,080	N71-24606*	c 05	NASA-CASE-XKS-10804 US-PATENT-APPL-SN-691909 US-PATENT-CLASS-35-17 US-PATENT-3,508,347	N71-24719*	c 03	NASA-CASE-GSC-10487-1 US-PATENT-APPL-SN-828983 US-PATENT-CLASS-320-39 US-PATENT-3,541,422
N71-24047*	c 15	NASA-CASE-XGS-03120 US-PATENT-APPL-SN-485958 US-PATENT-CLASS-156-3 US-PATENT-3,470,043	N71-24607*	c 06	NASA-CASE-XNP-09699 US-PATENT-APPL-SN-711972 US-PATENT-CLASS-73-17 US-PATENT-3,546,920	N71-24725*	c 23	NASA-CASE-GSC-10188-1 US-PATENT-APPL-SN-791888 US-PATENT-CLASS-62-384 US-PATENT-3,545,226
N71-24074*	c 16	NASA-CASE-XLA-03375 US-PATENT-APPL-SN-512562 US-PATENT-CLASS-356-104 US-PATENT-3,446,558	N71-24607*	c 06	NASA-CASE-XNP-09699 US-PATENT-APPL-SN-711972 US-PATENT-CLASS-73-17 US-PATENT-3,546,920	N71-24728*	c 05	NASA-CASE-MS-12243-1 US-PATENT-APPL-SN-857445 US-PATENT-CLASS-244-1 US-PATENT-3,537,668
N71-24142*	c 17	NASA-CASE-XLE-06969 US-PATENT-APPL-SN-655675 US-PATENT-CLASS-148-126 US-PATENT-3,463,679	N71-24612*	c 07	NASA-CASE-XMF-06092 US-PATENT-APPL-SN-550088 US-PATENT-CLASS-178-7.1 US-PATENT-3,470,318	N71-24729*	c 05	NASA-CASE-MS-13282-1 US-PATENT-APPL-SN-8498 US-PATENT-CLASS-128-2.1 US-PATENT-3,548,812
N71-24145*	c 33	NASA-CASE-XLE-03432 US-PATENT-APPL-SN-559349 US-PATENT-CLASS-13-35 US-PATENT-3,409,730	N71-24613*	c 07	NASA-CASE-NPO-10851 US-PATENT-APPL-SN-805406 US-PATENT-CLASS-325-325 US-PATENT-3,551,816	N71-24730*	c 05	NASA-CASE-XMS-09637-1 US-PATENT-APPL-SN-785710 US-PATENT-CLASS-2-2.1 US-PATENT-3,537,107
N71-24147*	c 05	NASA-CASE-XMS-10269 US-PATENT-APPL-SN-590158 US-PATENT-CLASS-165-46 US-PATENT-3,425,486	N71-24614*	c 07	NASA-CASE-XKS-09340 US-PATENT-APPL-SN-666555 US-PATENT-CLASS-343-703 US-PATENT-3,540,056	N71-24736*	c 28	NASA-CASE-XLE-03157 US-PATENT-APPL-SN-591014 US-PATENT-CLASS-60-240 US-PATENT-3,408,816
N71-24164*	c 15	NASA-CASE-XLA-01494 US-PATENT-APPL-SN-499122 US-PATENT-CLASS-156-545 US-PATENT-3,416,888	N71-24618*	c 09	NASA-CASE-FRC-10029 US-PATENT-APPL-SN-760389 US-PATENT-CLASS-128-2.06 US-PATENT-3,547,105	N71-24738*	c 05	NASA-CASE-ARC-10100-1 US-PATENT-APPL-SN-797058 US-PATENT-CLASS-128-24 US-PATENT-CLASS-129-25 US-PATENT-3,550,585
N71-24170*	c 16	NASA-CASE-XLA-04295 US-PATENT-APPL-SN-546149 US-PATENT-CLASS-356-107 US-PATENT-3,468,609	N71-24621*	c 07	NASA-CASE-GSC-10118-1 US-PATENT-APPL-SN-783375 US-PATENT-CLASS-179-15 US-PATENT-CLASS-325-4 US-PATENT-CLASS-343-100 US-PATENT-3,546,386	N71-24739*	c 06	NASA-CASE-ARC-10098-1 US-PATENT-APPL-SN-702967 US-PATENT-CLASS-260-2.5 US-PATENT-3,549,564
N71-24183*	c 18	NASA-CASE-XGS-04799 US-PATENT-APPL-SN-452944 US-PATENT-CLASS-106-84 US-PATENT-3,416,939	N71-24622*	c 07	NASA-CASE-NPO-10388 US-PATENT-APPL-SN-725432 US-PATENT-CLASS-179-15	N71-24740*	c 06	NASA-CASE-XMF-03074 US-PATENT-APPL-SN-593595 US-PATENT-CLASS-260-72.5 US-PATENT-3,516,971
N71-24184*	c 18	NASA-CASE-XNP-02139 US-PATENT-APPL-SN-430777 US-PATENT-CLASS-106-84				N71-24741*	c 07	NASA-CASE-NPO-10118

		US-PATENT-APPL-SN-704465			US-PATENT-APPL-SN-698630	N71-24910*	c 15	NASA-CASE-ERC-10045
		US-PATENT-CLASS-235-152			US-PATENT-CLASS-333-83			US-PATENT-APPL-SN-763685
		US-PATENT-3,541,314			US-PATENT-3,541,479			US-PATENT-CLASS-73-40.7
N71-24742*	c 07	NASA-CASE-NPO-10140	N71-24842*	c 09	NASA-CASE-MSC-12209	N71-24911*	c 17	US-PATENT-3,548,636
		US-PATENT-APPL-SN-691737			US-PATENT-APPL-SN-881039			NASA-CASE-XLE-04946
		US-PATENT-CLASS-187-7.1			US-PATENT-CLASS-343-797			US-PATENT-APPL-SN-605093
		US-PATENT-3,541,250			US-PATENT-3,546,705			US-PATENT-CLASS-118-308
N71-24750*	c 31	NASA-CASE-XGS-01654	N71-24843*	c 09	NASA-CASE-XMF-06617	N71-24934*	c 18	US-PATENT-3,472,202
		US-PATENT-APPL-SN-434148			US-PATENT-APPL-SN-656993			NASA-CASE-NPO-10051
		US-PATENT-CLASS-102-50			US-PATENT-CLASS-324-71			US-PATENT-APPL-SN-711898
		US-PATENT-3,282,541			US-PATENT-3,541,439			US-PATENT-CLASS-73-38
N71-24798*	c 10	NASA-CASE-XLE-03061-1	N71-24844*	c 10	NASA-CASE-NPO-10169	N71-24948*	c 21	US-PATENT-3,548,633
		US-PATENT-APPL-SN-632152			US-PATENT-APPL-SN-701733			NASA-CASE-ERC-10090
		US-PATENT-CLASS-340-412			US-PATENT-CLASS-328-171			US-PATENT-APPL-SN-811542
		US-PATENT-3,546,694			US-PATENT-3,541,459			US-PATENT-CLASS-343-112
N71-24799*	c 10	NASA-CASE-XNP-06505	N71-24857*	c 23	NASA-CASE-XMS-06056-1	N71-24964*	c 11	US-PATENT-3,550,129
		US-PATENT-APPL-SN-562933			US-PATENT-APPL-SN-532006			NASA-CASE-NPO-10141
		US-PATENT-CLASS-307-254			US-PATENT-CLASS-350-189			US-PATENT-APPL-SN-673227
		US-PATENT-3,501,648			US-PATENT-3,472,577			US-PATENT-CLASS-62-55.5
N71-24800*	c 09	NASA-CASE-ERC-10075	N71-24858*	c 33	NASA-CASE-MFS-14253	N71-24984*	c 15	US-PATENT-3,443,390
		US-PATENT-APPL-SN-775870			US-PATENT-APPL-SN-709622			NASA-CASE-MFS-14971
		US-PATENT-CLASS-321-45			US-PATENT-CLASS-161-69			US-PATENT-APPL-SN-827579
		US-PATENT-3,539,905			US-PATENT-3,551,266			US-PATENT-CLASS-74-468
N71-24803*	c 09	NASA-CASE-NPO-10242	N71-24861*	c 10	NASA-CASE-XMF-05195	N71-24985*	c 11	US-PATENT-3,541,875
		US-PATENT-APPL-SN-749181			US-PATENT-APPL-SN-785593			NASA-CASE-KSC-10126
		US-PATENT-CLASS-307-88			US-PATENT-CLASS-318-599			US-PATENT-APPL-SN-845973
		US-PATENT-3,541,346			US-PATENT-3,523,228			US-PATENT-CLASS-73-15
N71-24804*	c 09	NASA-CASE-GSC-10299-1	N71-24862*	c 10	NASA-CASE-FRC-10010	N71-25139*	c 10	US-PATENT-3,545,252
		US-PATENT-APPL-SN-836367			US-PATENT-APPL-SN-771937			NASA-CASE-MFS-10068
		US-PATENT-CLASS-343-100			US-PATENT-CLASS-307-235			US-PATENT-APPL-SN-700541
		US-PATENT-3,540,050			US-PATENT-3,543,050			US-PATENT-CLASS-321-9
N71-24805*	c 09	NASA-CASE-XMF-06892	N71-24863*	c 10	NASA-CASE-XMF-02966	N71-25213*	c 28	US-PATENT-3,487,288
		US-PATENT-APPL-SN-757875			US-PATENT-APPL-SN-560968			NASA-CASE-GSC-10709-1
		US-PATENT-CLASS-318-318			US-PATENT-CLASS-324-70			US-PATENT-APPL-SN-791288
		US-PATENT-3,546,553			US-PATENT-3,406,336			US-PATENT-CLASS-60-202
N71-24806*	c 09	NASA-CASE-NPO-10198	N71-24864*	c 14	NASA-CASE-XLE-04503	N71-25351*	c 33	US-PATENT-3,545,208
		US-PATENT-APPL-SN-723804			US-PATENT-APPL-SN-606463			NASA-CASE-MFS-14023
		US-PATENT-CLASS-328-165			US-PATENT-CLASS-250-225			US-PATENT-APPL-SN-795217
		US-PATENT-3,550,023			US-PATENT-3,546,471			US-PATENT-CLASS-161-161
N71-24807*	c 09	NASA-CASE-MFS-14114-2	N71-24865*	c 15	NASA-CASE-XMF-05114-3			US-PATENT-CLASS-220-9
		US-PATENT-APPL-SN-854815			US-PATENT-APPL-SN-837378			US-PATENT-CLASS-52-249
		US-PATENT-CLASS-165-105			US-PATENT-CLASS-72-56			US-PATENT-CLASS-52-404
		US-PATENT-CLASS-165-107			US-PATENT-3,540,250			US-PATENT-CLASS-62-45
		US-PATENT-CLASS-165-138	N71-24868*	c 23	NASA-CASE-ERC-10001	N71-25353*	c 33	US-PATENT-3,540,615
		US-PATENT-CLASS-310-4			US-PATENT-APPL-SN-712099			NASA-CASE-MFS-20355
		US-PATENT-3,537,515			US-PATENT-CLASS-350-310			US-PATENT-APPL-SN-845974
N71-24808*	c 09	NASA-CASE-XNP-08880			US-PATENT-3,540,802			US-PATENT-CLASS-165-104
		US-PATENT-APPL-SN-605094	N71-24875*	c 15	NASA-CASE-XLA-06199			US-PATENT-CLASS-165-105
		US-PATENT-CLASS-333-98			US-PATENT-APPL-SN-702911			US-PATENT-CLASS-165-133
		US-PATENT-3,416,106			US-PATENT-CLASS-148-6.11			US-PATENT-CLASS-219-378
N71-24809*	c 14	NASA-CASE-XNP-08961			US-PATENT-3,540,942			US-PATENT-CLASS-219-530
		US-PATENT-APPL-SN-661170	N71-24876*	c 33	NASA-CASE-XNP-05524			US-PATENT-CLASS-244-1
		US-PATENT-CLASS-250-84			US-PATENT-APPL-SN-250567	N71-25360*	c 32	US-PATENT-3,548,930
		US-PATENT-3,487,216			US-PATENT-CLASS-165-2			NASA-CASE-XLA-08530
N71-24813*	c 31	NASA-CASE-XAC-06029-1			US-PATENT-3,270,802			US-PATENT-APPL-SN-808577
		US-PATENT-APPL-SN-588651	N71-24890*	c 08	NASA-CASE-XKS-06167			US-PATENT-CLASS-73-90
		US-PATENT-CLASS-343-100			US-PATENT-APPL-SN-649076			US-PATENT-3,546,931
		US-PATENT-3,540,048			US-PATENT-CLASS-235-155	N71-25434*	c 31	NASA-CASE-MSC-13047-1
N71-24828*	c 16	NASA-CASE-XAC-10770-1			US-PATENT-3,535,497			US-PATENT-APPL-SN-850586
		US-PATENT-APPL-SN-690997	N71-24891*	c 08	NASA-CASE-XNP-09759			US-PATENT-CLASS-244-1
		US-PATENT-CLASS-356-28			US-PATENT-APPL-SN-606462			US-PATENT-CLASS-244-113
		US-PATENT-3,547,540			US-PATENT-CLASS-235-92			US-PATENT-CLASS-244-138
N71-24830*	c 17	NASA-CASE-XNP-04148			US-PATENT-3,541,312	N71-25490*	c 26	US-PATENT-3,547,376
		US-PATENT-APPL-SN-536210	N71-24892*	c 09	NASA-CASE-NPO-10716			NASA-CASE-ERC-10088
		US-PATENT-CLASS-204-38			US-PATENT-APPL-SN-851394			US-PATENT-APPL-SN-760927
		US-PATENT-3,472,742			US-PATENT-CLASS-307-104			US-PATENT-CLASS-73-141
N71-24831*	c 16	NASA-CASE-NPO-10548			US-PATENT-CLASS-317-123			US-PATENT-3,537,305
		US-PATENT-APPL-SN-775072			US-PATENT-CLASS-317-148.5	N71-25555*	c 24	US-PATENT-3,549,699
		US-PATENT-CLASS-330-4			US-PATENT-3,549,955			NASA-CASE-XNP-09469
		US-PATENT-3,486,123	N71-24893*	c 09	NASA-CASE-ERC-10125			US-PATENT-APPL-SN-645573
N71-24832*	c 16	NASA-CASE-ERC-10178			US-PATENT-APPL-SN-773029			US-PATENT-CLASS-204-168
		US-PATENT-APPL-SN-800973			US-PATENT-CLASS-323-56			US-PATENT-3,540,989
		US-PATENT-CLASS-331-94.5			US-PATENT-3,541,428	N71-25865*	c 10	NASA-CASE-KSC-10002
		US-PATENT-3,550,034			NASA-CASE-XLA-07473			US-PATENT-APPL-SN-782956
N71-24833*	c 15	NASA-CASE-XMF-03793	N71-24895*	c 15	US-PATENT-APPL-SN-839935			US-PATENT-CLASS-178-69.5
		US-PATENT-APPL-SN-453225			US-PATENT-CLASS-318-265	N71-25866*	c 09	US-PATENT-3,567,861
		US-PATENT-CLASS-72-56			US-PATENT-3,546,552			NASA-CASE-ARC-10003-1
		US-PATENT-3,360,972	N71-24896*	c 15	NASA-CASE-ERC-10034			US-PATENT-APPL-SN-717822
N71-24834*	c 15	NASA-CASE-XNP-05634			US-PATENT-APPL-SN-763706			US-PATENT-CLASS-178-66
		US-PATENT-APPL-SN-605096			US-PATENT-CLASS-250-43.5			US-PATENT-CLASS-179-100.2
		US-PATENT-CLASS-73-95			US-PATENT-3,549,882	N71-25881*	c 18	US-PATENT-3,549,799
		US-PATENT-3,460,379	N71-24897*	c 15	NASA-CASE-XLA-03538			NASA-CASE-XGS-05180
N71-24835*	c 15	NASA-CASE-NPO-10123			US-PATENT-APPL-SN-749149			US-PATENT-APPL-SN-721607
		US-PATENT-APPL-SN-731388			US-PATENT-CLASS-294-83			US-PATENT-CLASS-260-37
		US-PATENT-CLASS-128-272			US-PATENT-3,508,779			US-PATENT-3,567,677
		US-PATENT-CLASS-128-275	N71-24903*	c 15	NASA-CASE-MFS-20395	N71-25882*	c 10	NASA-CASE-GSC-10022-1
		US-PATENT-3,540,449			US-PATENT-APPL-SN-830715			US-PATENT-APPL-SN-785546
N71-24836*	c 15	NASA-CASE-XLE-08917-2			US-PATENT-CLASS-285-314			US-PATENT-CLASS-331-113
		US-PATENT-APPL-SN-852131			US-PATENT-CLASS-285-317			US-PATENT-3,559,096
		US-PATENT-CLASS-72-60			US-PATENT-CLASS-285-38	N71-25892*	c 14	NASA-CASE-XLA-04555-1
		US-PATENT-3,541,825			US-PATENT-CLASS-285-406			US-PATENT-APPL-SN-594584
N71-24840*	c 07	NASA-CASE-NPO-10649			US-PATENT-3,545,792			US-PATENT-CLASS-148-13
		US-PATENT-APPL-SN-795182	N71-24904*	c 09	NASA-CASE-MFS-20385	N71-25899*	c 10	US-PATENT-3,468,727
		US-PATENT-CLASS-325-113			US-PATENT-APPL-SN-853716			NASA-CASE-LEW-10345-1
		US-PATENT-3,541,450			US-PATENT-CLASS-310-10			US-PATENT-APPL-SN-805298
N71-24841*	c 09	NASA-CASE-XNP-09771			US-PATENT-3,541,361			US-PATENT-CLASS-137-61.5
								US-PATENT-CLASS-235-201

N71-25900*	c 10	US-PATENT-3,568,702 NASA-CASE-ERC-10032 US-PATENT-APPL-SN-757857 US-PATENT-CLASS-333-30 US-PATENT-CLASS-333-72 US-PATENT-3,568,103	N71-26136*	c 14	US-PATENT-3,564,401 NASA-CASE-XLA-01782 US-PATENT-APPL-SN-576792 US-PATENT-CLASS-73-15.6 US-PATENT-3,472,060	N71-26293*	c 05	US-PATENT-APPL-SN-719870 US-PATENT-CLASS-325-67 US-PATENT-3,553,586 NASA-CASE-XFR-07658-1 US-PATENT-APPL-SN-586324 US-PATENT-CLASS-128-2.06 US-PATENT-3,426,746
N71-25901*	c 14	NASA-CASE-XLA-02810 US-PATENT-APPL-SN-784252 US-PATENT-CLASS-250-43.5 US-PATENT-CLASS-250-83.3 US-PATENT-CLASS-340-233 US-PATENT-CLASS-340-285 US-PATENT-3,569,710	N71-26137*	c 14	NASA-CASE-LAR-10305 US-PATENT-APPL-SN-811037 US-PATENT-CLASS-324-0.5 US-PATENT-CLASS-324-58.5 US-PATENT-3,562,631	N71-26294*	c 15	NASA-CASE-XNP-02862-1 US-PATENT-APPL-SN-556830 US-PATENT-CLASS-277-13 US-PATENT-3,468,548
N71-25903*	c 17	NASA-CASE-XLA-08966-1 US-PATENT-APPL-SN-570678 US-PATENT-CLASS-204-33 US-PATENT-3,468,765	N71-26142*	c 10	NASA-CASE-NPO-10302 US-PATENT-APPL-SN-848811 US-PATENT-CLASS-343-768 US-PATENT-3,553,704	N71-26312*	c 15	NASA-CASE-XNP-01263-2 US-PATENT-APPL-SN-718279 US-PATENT-CLASS-287-169.365 US-PATENT-3,481,638
N71-25914*	c 16	NASA-CASE-XLA-03410 US-PATENT-APPL-SN-512561 US-PATENT-CLASS-250-199 US-PATENT-3,469,087	N71-26145*	c 15	NASA-CASE-FRC-10005 US-PATENT-APPL-SN-756266 US-PATENT-CLASS-33-189 US-PATENT-3,562,919	N71-26326*	c 10	NASA-CASE-NPO-10143 US-PATENT-APPL-SN-692331 US-PATENT-CLASS-58-24 US-PATENT-3,472,019
N71-25917*	c 10	NASA-CASE-NPO-10595 US-PATENT-APPL-SN-771760 US-PATENT-CLASS-340-347 US-PATENT-3,569,958	N71-26148*	c 15	NASA-CASE-XMF-05114-2 US-PATENT-APPL-SN-837377 US-PATENT-CLASS-72-56 US-PATENT-3,555,887	N71-26331*	c 10	NASA-CASE-XNP-10854 US-PATENT-APPL-SN-668248 US-PATENT-CLASS-330-31 US-PATENT-3,482,179
N71-25929*	c 06	NASA-CASE-NPO-10596 US-PATENT-APPL-SN-756381 US-PATENT-CLASS-260-2.5 US-PATENT-3,557,027	N71-26153*	c 18	NASA-CASE-XLE-03940 US-PATENT-APPL-SN-539255 US-PATENT-CLASS-148-126 US-PATENT-3,472,709	N71-26333*	c 05	NASA-CASE-XMS-09652-1 US-PATENT-APPL-SN-618969 US-PATENT-CLASS-2-6 US-PATENT-3,473,165
N71-25950*	c 10	NASA-CASE-XGS-06226 US-PATENT-APPL-SN-676387 US-PATENT-CLASS-331-113 US-PATENT-3,466,570	N71-26154*	c 16	NASA-CASE-ERC-10020 US-PATENT-APPL-SN-709399 US-PATENT-CLASS-350-3.5 US-PATENT-3,540,790	N71-26334*	c 10	NASA-CASE-XLA-02619 US-PATENT-APPL-SN-796691 US-PATENT-CLASS-317-DIG.3 US-PATENT-CLASS-317-153 US-PATENT-CLASS-340-235 US-PATENT-3,575,641
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N71-33160*	c 31	NASA-CASE-XLA-04063 US-PATENT-APPL-SN-802948 US-PATENT-CLASS-179-1 US-PATENT-CLASS-244-1 US-PATENT-CLASS-244-83 US-PATENT-3,586,261	N72-11084*	c 05	US-PATENT-APPL-SN-868530 US-PATENT-CLASS-62-467 US-PATENT-CLASS-62-56 US-PATENT-3,599,443	N72-11389*	c 15	NASA-CASE-XLA-05056 US-PATENT-APPL-SN-596733 US-PATENT-CLASS-210-445 US-PATENT-3,592,768
N71-33229*	c 23	NASA-CASE-NPO-10468 US-PATENT-APPL-SN-787646 US-PATENT-CLASS-350-310 US-PATENT-CLASS-350-55 US-PATENT-3,588,220	N72-11085*	c 05	NASA-CASE-MSC-13140 US-PATENT-APPL-SN-796358 US-PATENT-CLASS-285-410 US-PATENT-CLASS-297-232 US-PATENT-CLASS-297-68 US-PATENT-CLASS-5-69 US-PATENT-3,592,505	N72-11390*	c 15	NASA-CASE-MFS-18100 US-PATENT-APPL-SN-784055 US-PATENT-CLASS-15-143 US-PATENT-CLASS-15-210 US-PATENT-3,591,885
N71-33407*	c 10	NASA-CASE-NPO-10342 US-PATENT-APPL-SN-704446 US-PATENT-CLASS-178-69.5 US-PATENT-CLASS-179-15BS US-PATENT-CLASS-340-347DD US-PATENT-3,588,883	N72-11148*	c 07	US-PATENT-APPL-SN-848810 US-PATENT-CLASS-343-771 US-PATENT-CLASS-343-853 US-PATENT-3,599,216	N72-11391*	c 15	NASA-CASE-NPO-11012 US-PATENT-APPL-SN-845807 US-PATENT-CLASS-248-18 US-PATENT-CLASS-248-20 US-PATENT-3,592,422
N71-33408*	c 17	NASA-CASE-LEW-10327 US-PATENT-APPL-SN-722006 US-PATENT-CLASS-148-6.3 US-PATENT-3,591,426	N72-11149*	c 07	NASA-CASE-GSC-10390-1 US-PATENT-APPL-SN-749121 US-PATENT-CLASS-325-39 US-PATENT-CLASS-325-4 US-PATENT-CLASS-325-58 US-PATENT-CLASS-343-179 US-PATENT-CLASS-343-5DP US-PATENT-CLASS-343-7.5 US-PATENT-3,593,138	N72-11392*	c 15	NASA-CASE-MFS-20299 US-PATENT-APPL-SN-889437 US-PATENT-CLASS-156-320 US-PATENT-CLASS-156-66 US-PATENT-CLASS-219-221 US-PATENT-CLASS-219-243 US-PATENT-3,593,001
N71-33409*	c 03	NASA-CASE-ARC-10050 US-PATENT-APPL-SN-797219 US-PATENT-CLASS-136-89 US-PATENT-3,591,420	N72-11150*	c 07	NASA-CASE-NPO-11064 US-PATENT-APPL-SN-880248 US-PATENT-CLASS-331-10 US-PATENT-CLASS-331-34 US-PATENT-CLASS-331-66 US-PATENT-CLASS-331-7 US-PATENT-3,593,180	N72-11568* #	c 23	NASA-CASE-GSC-11133-1 US-PATENT-APPL-SN-121328 NASA-CASE-MFS-20095 US-PATENT-APPL-SN-855004 US-PATENT-CLASS-250-49.5B US-PATENT-CLASS-250-49.5TE US-PATENT-CLASS-250-51 US-PATENT-CLASS-250-52 US-PATENT-3,593,024
N71-33410*	c 16	NASA-CASE-NPO-10417 US-PATENT-APPL-SN-753974 US-PATENT-CLASS-331-94.5 US-PATENT-CLASS-352-84 US-PATENT-CLASS-95-11 US-PATENT-3,587,424	N72-11171*	c 08	NASA-CASE-NPO-10769 US-PATENT-APPL-SN-813494 US-PATENT-CLASS-179-15.55R US-PATENT-3,598,921	N72-11569*	c 24	US-PATENT-CLASS-250-49.5B US-PATENT-CLASS-250-49.5TE US-PATENT-CLASS-250-51 US-PATENT-CLASS-250-52 US-PATENT-3,593,024
N71-33518*	c 15	NASA-CASE-XLA-03661 US-PATENT-APPL-SN-751266 US-PATENT-CLASS-408-137 US-PATENT-CLASS-90-11 US-PATENT-3,585,882	N72-11172*	c 08	NASA-CASE-GSC-10880-1 US-PATENT-APPL-SN-831118 US-PATENT-CLASS-235-61NV US-PATENT-CLASS-33-15A US-PATENT-CLASS-33-204C US-PATENT-3,599,335	N72-11708*	c 28	NASA-CASE-MFS-20619 US-PATENT-APPL-SN-18982 US-PATENT-CLASS-139-425R US-PATENT-CLASS-239-265.19 US-PATENT-CLASS-239-265.43 US-PATENT-CLASS-60-271 US-PATENT-3,596,465
N71-33519*	c 09	NASA-CASE-ERC-10100 US-PATENT-APPL-SN-766697 US-PATENT-CLASS-313-109.5 US-PATENT-CLASS-313-231 US-PATENT-CLASS-315-108 US-PATENT-CLASS-315-111 US-PATENT-CLASS-340-324 US-PATENT-CLASS-340-336 US-PATENT-3,588,874	N72-11224*	c 09	NASA-CASE-GSC-10614-1 US-PATENT-APPL-SN-822534 US-PATENT-CLASS-179-100-2CA US-PATENT-CLASS-179-100-2MD US-PATENT-CLASS-274-4R US-PATENT-3,592,478	N72-11709*	c 28	NASA-CASE-NPO-10737 US-PATENT-APPL-SN-760114 US-PATENT-CLASS-60-202 US-PATENT-CLASS-60-39-48 US-PATENT-3,591,967
N71-33606*	c 07	NASA-CASE-NPO-11031 US-PATENT-APPL-SN-864097 US-PATENT-CLASS-333-21A US-PATENT-CLASS-333-6 US-PATENT-CLASS-333-7 US-PATENT-3,588,751	N72-11225*	c 09	NASA-CASE-KSC-10162 US-PATENT-APPL-SN-817481 US-PATENT-CLASS-324-102 US-PATENT-CLASS-324-119 US-PATENT-CLASS-324-123R US-PATENT-3,593,132	N72-12080*	c 07	US-PATENT-CLASS-343-6.5R US-PATENT-CLASS-343-6.8R US-PATENT-3,594,790
N71-33612*	c 11	NASA-CASE-XLA-09480 US-PATENT-APPL-SN-874435 US-PATENT-CLASS-73-147 US-PATENT-3,587,306	N72-11256*	c 10	NASA-CASE-ARC-10042-2 US-PATENT-APPL-SN-33159 US-PATENT-CLASS-330-107 US-PATENT-CLASS-330-109 US-PATENT-CLASS-330-175 US-PATENT-3,593,175	N72-12081*	c 07	NASA-CASE-GSC-10185-1 US-PATENT-APPL-SN-733039 US-PATENT-CLASS-178-DIG.12 US-PATENT-CLASS-178-6 US-PATENT-CLASS-178-7.3 US-PATENT-CLASS-325-10 US-PATENT-CLASS-325-13 US-PATENT-3,588,331
N71-33613*	c 07	NASA-CASE-NPO-10700 US-PATENT-APPL-SN-840308 US-PATENT-CLASS-318-227 US-PATENT-CLASS-318-230 US-PATENT-3,588,648	N72-11363*	c 14	NASA-CASE-MSC-11847-1 US-PATENT-APPL-SN-8497 US-PATENT-CLASS-73-149 US-PATENT-CLASS-73-290B US-PATENT-3,596,510	N72-12136*	c 09	NASA-CASE-XER-09521 US-PATENT-APPL-SN-771530 US-PATENT-CLASS-136-202 US-PATENT-CLASS-136-206 US-PATENT-CLASS-136-227 US-PATENT-CLASS-343-DIG.3 US-PATENT-CLASS-343-720 US-PATENT-CLASS-343-840 US-PATENT-3,594,803
N71-33696*	c 07	NASA-CASE-MSC-12165-1 US-PATENT-APPL-SN-875849 US-PATENT-CLASS-325-347 US-PATENT-CLASS-325-348 US-PATENT-CLASS-325-473 US-PATENT-CLASS-325-480 US-PATENT-CLASS-325-482 US-PATENT-CLASS-328-164 US-PATENT-CLASS-328-165	N72-11364*	c 14	NASA-CASE-NPO-10778 US-PATENT-APPL-SN-865909 US-PATENT-CLASS-250-235 US-PATENT-CLASS-33-125 US-PATENT-CLASS-356-167 US-PATENT-CLASS-356-32	N72-12408*	c 15	NASA-CASE-XLA-05966

		US-PATENT-APPL-SN-784544		US-PATENT-APPL-SN-887698	N72-17451*	c 15	NASA-CASE-WLP-10002
		US-PATENT-CLASS-140-105		US-PATENT-CLASS-128-2.1A			US-PATENT-APPL-SN-47062
		US-PATENT-CLASS-72-307		US-PATENT-CLASS-307-252F			US-PATENT-CLASS-180-125
		US-PATENT-3,584,660		US-PATENT-CLASS-307-252J			US-PATENT-CLASS-180-127
N72-12409*	c 15	NASA-CASE-NPO-10637		US-PATENT-CLASS-325-492			US-PATENT-CLASS-308-DIG.1
		US-PATENT-APPL-SN-851298		US-PATENT-CLASS-340-177			US-PATENT-CLASS-308-5
		US-PATENT-CLASS-236-68		US-PATENT-3,603,846			US-PATENT-CLASS-308-9
		US-PATENT-CLASS-337-354	N72-17154*	NASA-CASE-ERC-10139	c 09		US-PATENT-3,610,365
		US-PATENT-CLASS-337-359		US-PATENT-APPL-SN-889555		N72-17452*	NASA-CASE-XLA-10322
		US-PATENT-CLASS-337-75		US-PATENT-CLASS-321-10	c 15		US-PATENT-APPL-SN-887699
		US-PATENT-CLASS-60-23		US-PATENT-CLASS-336-178			US-PATENT-CLASS-73-88.5R
		US-PATENT-3,591,960		US-PATENT-3,603,864			US-PATENT-3,608,365
N72-12440*	c 16	NASA-CASE-MFS-20180	N72-17155*	NASA-CASE-NPO-11023	c 15		NASA-CASE-NPO-11177
		US-PATENT-APPL-SN-863276		US-PATENT-APPL-SN-865274			US-PATENT-APPL-SN-20960
		US-PATENT-CLASS-331-94.5		US-PATENT-CLASS-330-18			US-PATENT-CLASS-62-51
		US-PATENT-CLASS-350-1		US-PATENT-CLASS-330-40			US-PATENT-3,605,424
		US-PATENT-CLASS-350-312		US-PATENT-3,603,892	N72-17454*	c 15	NASA-CASE-NPO-11059
		US-PATENT-3,593,194	N72-17156*	NASA-CASE-NPO-10199			US-PATENT-APPL-SN-864020
N72-13437*	c 16	NASA-CASE-MFS-20125		US-PATENT-APPL-SN-739391			US-PATENT-CLASS-248-14
		US-PATENT-APPL-SN-830366		US-PATENT-CLASS-178-7.1			US-PATENT-3,606,979
		US-PATENT-CLASS-178-DIG.21		US-PATENT-CLASS-330-11	N72-17455*	c 15	NASA-CASE-NPO-11140
		US-PATENT-CLASS-178-6		US-PATENT-CLASS-330-35			US-PATENT-APPL-SN-15019
		US-PATENT-CLASS-250-203X		US-PATENT-3,609,230			US-PATENT-CLASS-174-84
		US-PATENT-CLASS-356-152	N72-17157*	NASA-CASE-NPO-11253	c 09		US-PATENT-CLASS-200-64
		US-PATENT-3,603,686		US-PATENT-APPL-SN-21808			US-PATENT-CLASS-339-176M
N72-15098* #	c 05	NASA-CASE-MSC-13917-1		US-PATENT-CLASS-307-223			US-PATENT-CLASS-339-278M
		US-PATENT-APPL-SN-198355		US-PATENT-CLASS-307-227			US-PATENT-CLASS-339-46
N72-15986*	c 03	NASA-CASE-XGS-10010		US-PATENT-CLASS-307-81			US-PATENT-CLASS-69-1.811
		US-PATENT-APPL-SN-729299		US-PATENT-CLASS-328-186			US-PATENT-3,611,274
		US-PATENT-CLASS-136-133		US-PATENT-3,609,387	N72-17532*	c 18	NASA-CASE-MFS-13532
		US-PATENT-CLASS-136-135	N72-17171*	NASA-CASE-XAC-05462-2			US-PATENT-APPL-SN-720546
		US-PATENT-CLASS-136-6		US-PATENT-APPL-SN-28235			US-PATENT-CLASS-106-292
		US-PATENT-3,607,401		US-PATENT-CLASS-307-295			US-PATENT-CLASS-106-299
N72-16015*	c 05	NASA-CASE-KSC-10278		US-PATENT-CLASS-328-167			US-PATENT-3,607,338
		US-PATENT-APPL-SN-856327		US-PATENT-CLASS-330-109	N72-17747*	c 23	NASA-CASE-ERC-10089
		US-PATENT-CLASS-324-66		US-PATENT-CLASS-330-176			US-PATENT-APPL-SN-791267
		US-PATENT-CLASS-340-279		US-PATENT-CLASS-333-70CR			US-PATENT-CLASS-340-174AG
		US-PATENT-CLASS-35-8		US-PATENT-3,609,567			US-PATENT-CLASS-340-174CT
N72-16172*	c 10	US-PATENT-3,609,740	N72-17172*	NASA-CASE-ARC-10020	c 10		US-PATENT-CLASS-340-174GA
		NASA-CASE-ARC-10269-1		US-PATENT-APPL-SN-31885			US-PATENT-CLASS-340-174SC
		US-PATENT-APPL-SN-56791		US-PATENT-CLASS-330-107			US-PATENT-3,611,330
		US-PATENT-CLASS-307-230		US-PATENT-CLASS-330-109	N72-17820*	c 26	NASA-CASE-XER-08478-1
		US-PATENT-CLASS-307-262		US-PATENT-CLASS-330-26			US-PATENT-APPL-SN-672388
		US-PATENT-CLASS-328-155		US-PATENT-CLASS-330-31			US-PATENT-CLASS-148-187
		US-PATENT-3,614,475		US-PATENT-CLASS-330-94			US-PATENT-CLASS-29-578
N72-16282*	c 14	NASA-CASE-LAR-10913		US-PATENT-3,605,032			US-PATENT-CLASS-29-589
		US-PATENT-APPL-SN-779160	N72-17173*	NASA-CASE-MFS-13130			US-PATENT-3,602,984
		US-PATENT-CLASS-73-12		US-PATENT-APPL-SN-7868	N72-17843*	c 28	NASA-CASE-NPO-10046
		US-PATENT-3,605,482		US-PATENT-CLASS-250-209			US-PATENT-APPL-SN-880635
N72-16283*	c 14	NASA-CASE-GSC-10780-1		US-PATENT-CLASS-250-83.3UV			US-PATENT-CLASS-60-258
		US-PATENT-APPL-SN-860493		US-PATENT-CLASS-340-228.2			US-PATENT-CLASS-60-39.74
		US-PATENT-CLASS-82-24R		US-PATENT-3,609,384			US-PATENT-3,603,092
		US-PATENT-3,608,409	N72-17183*	NASA-CASE-MFS-20509	N72-17873*	c 30	NASA-CASE-ARC-10134
N72-16329*	c 15	NASA-CASE-XLA-07829		US-PATENT-APPL-SN-889557			US-PATENT-APPL-SN-819898
		US-PATENT-APPL-SN-763684		US-PATENT-CLASS-73-147			US-PATENT-CLASS-244-3.21
		US-PATENT-CLASS-264-DIG.44		US-PATENT-3,602,920			US-PATENT-3,603,532
		US-PATENT-CLASS-264-221	N72-17323*	NASA-CASE-ERC-10248	N72-17947*	c 33	NASA-CASE-MSC-12143-1
		US-PATENT-CLASS-264-225		US-PATENT-APPL-SN-868445			US-PATENT-APPL-SN-781268
		US-PATENT-CLASS-264-227		US-PATENT-CLASS-350-162			US-PATENT-CLASS-102-105
		US-PATENT-3,608,046		US-PATENT-CLASS-356-113			US-PATENT-CLASS-161-67
N72-16330*	c 15	NASA-CASE-LAR-10203-1		US-PATENT-CLASS-356-209			US-PATENT-CLASS-244-117
		US-PATENT-APPL-SN-769592		US-PATENT-CLASS-356-244			US-PATENT-3,603,260
		US-PATENT-CLASS-156-84		US-PATENT-3,603,690	N72-17948*	c 33	NASA-CASE-NPO-10828
		US-PATENT-CLASS-156-86	N72-17324*	NASA-CASE-MFS-20596			US-PATENT-APPL-SN-873260
		US-PATENT-3,607,495		US-PATENT-APPL-SN-7867			US-PATENT-CLASS-165-105
N72-17093*	c 06	NASA-CASE-LEW-10794-1		US-PATENT-CLASS-350-3.5			US-PATENT-3,603,382
		US-PATENT-APPL-SN-33535		US-PATENT-3,605,519	N72-18184*	c 08	NASA-CASE-NPO-10629
		US-PATENT-CLASS-23-55	N72-17325*	NASA-CASE-MSC-15158-1			US-PATENT-APPL-SN-860751
		US-PATENT-CLASS-23-88		US-PATENT-APPL-SN-889479			US-PATENT-CLASS-178-50
		US-PATENT-CLASS-23-97		US-PATENT-CLASS-324-52			US-PATENT-CLASS-178-66
		US-PATENT-3,607,015		US-PATENT-3,609,535			US-PATENT-CLASS-179-15
N72-17094*	c 06	NASA-CASE-NPO-10234	N72-17326*	NASA-CASE-XMS-01994-1			US-PATENT-CLASS-235-154
		US-PATENT-APPL-SN-800204		US-PATENT-APPL-SN-814212			US-PATENT-CLASS-340-347DD
		US-PATENT-CLASS-23-230R		US-PATENT-CLASS-356-4			US-PATENT-3,603,976
		US-PATENT-CLASS-23-232C		US-PATENT-3,603,683	N72-18411*	c 14	NASA-CASE-KSC-10294
		US-PATENT-CLASS-23-253PC	N72-17327*	NASA-CASE-LEW-10281-1			US-PATENT-APPL-SN-889556
		US-PATENT-CLASS-73-23.1		US-PATENT-APPL-SN-861649			US-PATENT-CLASS-307-311
		US-PATENT-3,607,076		US-PATENT-CLASS-73-188			US-PATENT-CLASS-346-107A
N72-17095*	c 06	NASA-CASE-NPO-10774		US-PATENT-3,605,495			US-PATENT-CLASS-346-23
		US-PATENT-APPL-SN-848805	N72-17328*	NASA-CASE-XLA-07813			US-PATENT-CLASS-352-84
		US-PATENT-CLASS-23-201		US-PATENT-APPL-SN-791364			US-PATENT-CLASS-95-1.1
		US-PATENT-CLASS-23-230		US-PATENT-CLASS-250-207			US-PATENT-3,603,974
		US-PATENT-CLASS-23-253		US-PATENT-CLASS-250-41.9	N72-18477*	c 15	NASA-CASE-GSC-10566-1
		US-PATENT-CLASS-73-76		US-PATENT-CLASS-250-49.5			US-PATENT-APPL-SN-889438
		US-PATENT-3,607,080		US-PATENT-CLASS-250-71.5			US-PATENT-CLASS-242-54
N72-17109*	c 07	NASA-CASE-MSC-12146-1		US-PATENT-CLASS-250-83.3			US-PATENT-CLASS-52-108
		US-PATENT-APPL-SN-50206		US-PATENT-3,609,353			US-PATENT-3,608,844
		US-PATENT-CLASS-178-5.2R	N72-17329*	NASA-CASE-FRC-10012	N72-18766*	c 28	NASA-CASE-GSC-10640-1
		US-PATENT-CLASS-178-5.4		US-PATENT-APPL-SN-771216			US-PATENT-APPL-SN-17101
		US-PATENT-CLASS-178-6.7		US-PATENT-CLASS-73-194A			US-PATENT-CLASS-23-281
		US-PATENT-3,603,722		US-PATENT-3,611,801			US-PATENT-CLASS-23-288
N72-17152*	c 09	NASA-CASE-ARC-10178-1	N72-17450*	NASA-CASE-MSC-12279			US-PATENT-CLASS-60-260
		US-PATENT-APPL-SN-47443		US-PATENT-APPL-SN-24154			US-PATENT-3,603,093
		US-PATENT-CLASS-250-211J		US-PATENT-CLASS-188-1C	N72-18859*	c 31	NASA-CASE-MSC-13281
		US-PATENT-3,603,798		US-PATENT-CLASS-188-129			US-PATENT-APPL-SN-7669
N72-17153*	c 09	NASA-CASE-ARC-10105		US-PATENT-3,603,433			US-PATENT-CLASS-244-15.5

N72-20031*	c 03	US-PATENT-3,606,212	US-PATENT-CLASS-307-313	US-PATENT-APPL-SN-10161
		NASA-CASE-GSC-10669-1	US-PATENT-CLASS-328-207	US-PATENT-CLASS-122-32
		US-PATENT-APPL-SN-90595	US-PATENT-CLASS-330-30D	US-PATENT-CLASS-165-133
		US-PATENT-CLASS-136-89	US-PATENT-3,633,048	US-PATENT-CLASS-165-155
N72-20032*	c 03	US-PATENT-CLASS-244-1SS	NASA-CASE-XLA-11189	US-PATENT-CLASS-165-158
		US-PATENT-CLASS-340-210	US-PATENT-APPL-SN-889375	US-PATENT-CLASS-165-161
		US-PATENT-3,636,539	US-PATENT-CLASS-324-115	US-PATENT-CLASS-165-174
		NASA-CASE-NPO-11021	US-PATENT-CLASS-324-132	US-PATENT-3,630,276
N72-20033*	c 03	US-PATENT-APPL-SN-880250	US-PATENT-3,638,114	NASA-CASE-ERC-10108
		US-PATENT-CLASS-136-166	NASA-CASE-NPO-11133	US-PATENT-APPL-SN-833049
		US-PATENT-CLASS-136-79	US-PATENT-APPL-SN-887685	US-PATENT-CLASS-156-3
		US-PATENT-CLASS-136-81	US-PATENT-CLASS-307-295	US-PATENT-CLASS-96-36.2
N72-20033*	c 03	US-PATENT-3,625,766	US-PATENT-CLASS-328-16	US-PATENT-3,615,465
		NASA-CASE-NPO-10401	US-PATENT-CLASS-328-166	NASA-CASE-GSC-11304-1
		US-PATENT-APPL-SN-15025	US-PATENT-CLASS-328-20	US-PATENT-APPL-SN-137912
		US-PATENT-CLASS-210-212	US-PATENT-CLASS-328-38	NASA-CASE-XLA-11154
N72-20034*	c 03	US-PATENT-CLASS-356-222	US-PATENT-3,626,308	US-PATENT-APPL-SN-23532
		US-PATENT-3,630,627	NASA-CASE-NPO-11203	US-PATENT-CLASS-343-706
		NASA-CASE-LEW-11359-2	US-PATENT-APPL-SN-3696	US-PATENT-CLASS-343-912
		US-PATENT-APPL-SN-57399	US-PATENT-CLASS-324-83A	US-PATENT-3,623,107
N72-20096*	c 05	US-PATENT-CLASS-136-100R	US-PATENT-CLASS-324-85	NASA-CASE-NPO-11001
		US-PATENT-CLASS-136-175	US-PATENT-CLASS-328-133	US-PATENT-APPL-SN-856279
		US-PATENT-CLASS-136-83R	US-PATENT-CLASS-343-12	US-PATENT-CLASS-343-100ST
		US-PATENT-3,635,765	US-PATENT-3,631,351	US-PATENT-CLASS-343-5CM
N72-20096*	c 05	NASA-CASE-MSC-12411-1	NASA-CASE-MSC-13407-1	US-PATENT-CLASS-343-6.5R
		US-PATENT-APPL-SN-701244	US-PATENT-APPL-SN-65840	US-PATENT-3,624,650
		US-PATENT-CLASS-128-142.5	US-PATENT-CLASS-315-22	NASA-CASE-ERC-10112
		US-PATENT-CLASS-128-402	US-PATENT-CLASS-315-25	US-PATENT-APPL-SN-796690
N72-20097*	c 05	US-PATENT-CLASS-2-2.1	US-PATENT-3,638,066	US-PATENT-CLASS-179-100.2K
		US-PATENT-3,635,216	NASA-CASE-NPO-11210	US-PATENT-3,614,343
		NASA-CASE-MFS-20332	US-PATENT-APPL-SN-880831	NASA-CASE-KSC-10326
		US-PATENT-APPL-SN-869260	US-PATENT-CLASS-123-102	US-PATENT-APPL-SN-25487
N72-20098*	c 05	US-PATENT-CLASS-137-469	US-PATENT-CLASS-180-105E	US-PATENT-CLASS-235-155
		US-PATENT-CLASS-137-81	US-PATENT-CLASS-318-308	US-PATENT-CLASS-340-347DD
		US-PATENT-3,636,966	US-PATENT-CLASS-318-327	US-PATENT-3,638,002
		NASA-CASE-MSC-12398	US-PATENT-CLASS-318-376	NASA-CASE-ERC-10307
N72-20098*	c 05	US-PATENT-APPL-SN-785615	US-PATENT-3,630,304	US-PATENT-APPL-SN-39755
		US-PATENT-CLASS-2-2.1	NASA-CASE-GSC-10514-1	US-PATENT-CLASS-307-299
		US-PATENT-3,624,839	US-PATENT-APPL-SN-873045	US-PATENT-CLASS-307-303
		NASA-CASE-NPO-10765	US-PATENT-CLASS-250-208	US-PATENT-CLASS-307-311
N72-20121*	c 06	US-PATENT-APPL-SN-770425	US-PATENT-CLASS-356-138	US-PATENT-CLASS-340-173.2
		US-PATENT-CLASS-260-544F	US-PATENT-CLASS-356-152	US-PATENT-CLASS-340-173LS
		US-PATENT-3,637,842	US-PATENT-3,637,312	US-PATENT-3,623,030
		NASA-CASE-NPO-10844	NASA-CASE-LAR-10176-1	NASA-CASE-NPO-10743
N72-20140*	c 07	US-PATENT-APPL-SN-839934	US-PATENT-APPL-SN-811038	US-PATENT-APPL-SN-850587
		US-PATENT-CLASS-178-69.5R	US-PATENT-CLASS-95-18	US-PATENT-CLASS-340-174CS
		US-PATENT-CLASS-179-158S	US-PATENT-3,626,828	US-PATENT-CLASS-340-174LC
		US-PATENT-CLASS-325-321	NASA-CASE-GSC-10503-1	US-PATENT-CLASS-340-174M
N72-20140*	c 07	US-PATENT-CLASS-325-38	US-PATENT-APPL-SN-789044	US-PATENT-CLASS-340-174SR
		US-PATENT-CLASS-325-4	US-PATENT-CLASS-250-83.6R	US-PATENT-3,613,110
		US-PATENT-CLASS-325-58	US-PATENT-3,626,189	NASA-CASE-NPO-11018
		US-PATENT-3,626,298	NASA-CASE-GSC-10607-1	US-PATENT-APPL-SN-873259
N72-20141*	c 07	NASA-CASE-ERC-10179	US-PATENT-APPL-SN-27340	US-PATENT-CLASS-340-347AD
		US-PATENT-APPL-SN-50207	US-PATENT-CLASS-251-129	US-PATENT-3,613,111
		US-PATENT-CLASS-325-445	US-PATENT-CLASS-251-333	NASA-CASE-LEW-11005-1
		US-PATENT-CLASS-329-161	US-PATENT-3,632,081	US-PATENT-APPL-SN-86548
N72-20141*	c 07	US-PATENT-CLASS-329-162	NASA-CASE-NPO-10671	US-PATENT-CLASS-323-DIG.1
		US-PATENT-CLASS-332-51W	US-PATENT-APPL-SN-857967	US-PATENT-CLASS-323-22T
		US-PATENT-CLASS-333-73W	US-PATENT-CLASS-188-1B	US-PATENT-CLASS-323-38
		US-PATENT-CLASS-343-772	US-PATENT-CLASS-188-1C	US-PATENT-3,638,103
N72-20141*	c 07	US-PATENT-CLASS-343-773	US-PATENT-CLASS-188-268	NASA-CASE-LAR-10545-1
		US-PATENT-CLASS-343-786	US-PATENT-3,637,051	US-PATENT-APPL-SN-31703
		US-PATENT-3,633,110	NASA-CASE-FRC-10038	US-PATENT-CLASS-343-771
		NASA-CASE-NPO-11243	US-PATENT-APPL-SN-889554	US-PATENT-CLASS-343-893
N72-20154* #	c 07	US-PATENT-APPL-SN-177753	US-PATENT-CLASS-29-412	US-PATENT-3,638,224
		NASA-CASE-NPO-11130	US-PATENT-CLASS-29-426	NASA-CASE-ARC-10192
		US-PATENT-APPL-SN-21508	US-PATENT-CLASS-29-527.2	US-PATENT-APPL-SN-15024
		US-PATENT-CLASS-235-152	US-PATENT-CLASS-29-624	US-PATENT-CLASS-307-230
N72-20176*	c 08	US-PATENT-CLASS-235-92CC	US-PATENT-CLASS-51-216	US-PATENT-CLASS-307-295
		US-PATENT-CLASS-235-92DE	US-PATENT-CLASS-51-320	US-PATENT-CLASS-328-142
		US-PATENT-CLASS-235-92DM	US-PATENT-CLASS-51-323	US-PATENT-CLASS-328-167
		US-PATENT-CLASS-235-92LG	US-PATENT-3,636,623	US-PATENT-CLASS-330-70R
N72-20177*	c 08	US-PATENT-CLASS-235-92R	NASA-CASE-NPO-10704	US-PATENT-CLASS-330-85
		US-PATENT-CLASS-340-347DA	US-PATENT-APPL-SN-59895	US-PATENT-CLASS-333-80
		US-PATENT-CLASS-340-347DD	US-PATENT-CLASS-138-178	US-PATENT-3,621,407
		US-PATENT-3,632,996	US-PATENT-CLASS-285-18	NASA-CASE-NPO-11134
N72-20177*	c 08	NASA-CASE-NPO-10748	US-PATENT-CLASS-285-345	US-PATENT-APPL-SN-883524
		US-PATENT-APPL-SN-63383	US-PATENT-3,632,140	US-PATENT-CLASS-318-576
		US-PATENT-CLASS-324-77G	NASA-CASE-MFS-20698	US-PATENT-CLASS-324-71R
		US-PATENT-3,631,339	US-PATENT-APPL-SN-3418	US-PATENT-CLASS-346-1
N72-20199*	c 09	NASA-CASE-NPO-10722	US-PATENT-CLASS-100-299	US-PATENT-CLASS-346-29
		US-PATENT-APPL-SN-860492	US-PATENT-CLASS-23-209.1	US-PATENT-3,624,659
		US-PATENT-CLASS-200-81.9M	US-PATENT-CLASS-264-22	NASA-CASE-KSC-10393
		US-PATENT-CLASS-335-205	US-PATENT-CLASS-425-77	US-PATENT-APPL-SN-71047
N72-20200*	c 09	US-PATENT-3,632,923	US-PATENT-3,632,242	US-PATENT-CLASS-307-257
		NASA-CASE-NPO-10694	NASA-CASE-XLE-04599	US-PATENT-CLASS-307-259
		US-PATENT-APPL-SN-24224	US-PATENT-APPL-SN-751215	US-PATENT-CLASS-331-111
		US-PATENT-CLASS-339-275T	US-PATENT-CLASS-176-86G	US-PATENT-CLASS-331-14
N72-20206* #	c 09	US-PATENT-CLASS-339-276T	US-PATENT-3,629,068	US-PATENT-CLASS-331-23
		US-PATENT-3,631,382	NASA-CASE-XNP-03282	US-PATENT-CLASS-331-30
		NASA-CASE-ERC-10468	US-PATENT-APPL-SN-745337	US-PATENT-3,614,648
		US-PATENT-APPL-SN-144958	US-PATENT-CLASS-60-254	NASA-CASE-LAR-10503-1
N72-20221*	c 10	NASA-CASE-GSC-10082-1	US-PATENT-3,636,711	US-PATENT-APPL-SN-229143
		US-PATENT-APPL-SN-41430	NASA-CASE-MFS-20922	NASA-CASE-MFS-20829
		US-PATENT-CLASS-307-273	US-PATENT-APPL-SN-220274	US-PATENT-APPL-SN-61894
		US-PATENT-CLASS-307-288	NASA-CASE-NPO-10831	US-PATENT-CLASS-169-28
N72-20221*	c 10	US-PATENT-CLASS-307-288	US-PATENT-CLASS-307-313	US-PATENT-CLASS-122-32
		US-PATENT-CLASS-307-288	US-PATENT-CLASS-328-207	US-PATENT-CLASS-165-133
		US-PATENT-CLASS-307-288	US-PATENT-CLASS-330-30D	US-PATENT-CLASS-165-155
		US-PATENT-CLASS-307-288	US-PATENT-3,633,048	US-PATENT-CLASS-165-158
N72-20222*	c 10	US-PATENT-CLASS-307-288	NASA-CASE-XLA-11189	US-PATENT-CLASS-165-161
		US-PATENT-CLASS-307-288	US-PATENT-APPL-SN-889375	US-PATENT-CLASS-165-174
		US-PATENT-CLASS-307-288	US-PATENT-CLASS-324-115	US-PATENT-3,630,276
		US-PATENT-CLASS-307-288	US-PATENT-CLASS-324-132	NASA-CASE-ERC-10108
N72-20223*	c 10	US-PATENT-CLASS-307-288	US-PATENT-3,638,114	US-PATENT-APPL-SN-833049
		US-PATENT-CLASS-307-288	NASA-CASE-NPO-11133	US-PATENT-CLASS-156-3
		US-PATENT-CLASS-307-288	US-PATENT-APPL-SN-887685	US-PATENT-CLASS-96-36.2
		US-PATENT-CLASS-307-288	US-PATENT-CLASS-307-295	US-PATENT-3,615,465
N72-20223*	c 10	US-PATENT-CLASS-307-288	US-PATENT-CLASS-328-16	NASA-CASE-GSC-11304-1
		US-PATENT-CLASS-307-288	US-PATENT-CLASS-328-166	US-PATENT-APPL-SN-137912
		US-PATENT-CLASS-307-288	US-PATENT-CLASS-328-20	NASA-CASE-XLA-11154
		US-PATENT-CLASS-307-288	US-PATENT-CLASS-328-38	US-PATENT-APPL-SN-23532
N72-20224*	c 10	US-PATENT-CLASS-307-288	US-PATENT-3,626,308	US-PATENT-CLASS-343-706
		US-PATENT-CLASS-307-288	NASA-CASE-NPO-11203	US-PATENT-CLASS-343-912
		US-PATENT-CLASS-307-288	US-PATENT-APPL-SN-3696	US-PATENT-3,623,107
		US-PATENT-CLASS-307-288	US-PATENT-CLASS-324-83A	NASA-CASE-NPO-11001
N72-20224*	c 10	US-PATENT-CLASS-307-288	US-PATENT-CLASS-324-85	US-PATENT-APPL-SN-856279
		US-PATENT-CLASS-307-288	US-PATENT-CLASS-328-133	US-PATENT-CLASS-343-100ST
		US-PATENT-CLASS-307-288	US-PATENT-CLASS-343-12	US-PATENT-CLASS-343-5CM
		US-PATENT-CLASS-307-288	US-PATENT-3,631,351	US-PATENT-CLASS-343-6.5R
N72-20225*	c 10	US-PATENT-CLASS-307-288	NASA-CASE-MSC-13407-1	US-PATENT-3,624,650
		US-PATENT-CLASS-307-288	US-PATENT-APPL-SN-65840	NASA-CASE-ERC-10112
		US-PATENT-CLASS-307-288	US-PATENT-CLASS-315-22	US-PATENT-APPL-SN-796690
		US-PATENT-CLASS-307-288	US-PATENT-CLASS-315-25	US-PATENT-CLASS-179-100.2K
N72-20244*	c 11	US-PATENT-CLASS-307-288	US-PATENT-3,638,066	US-PATENT-3,614,343
		US-PATENT-CLASS-307-288	NASA-CASE-NPO-11210	NASA-CASE-KSC-10326
		US-PATENT-APPL-SN-880831	US-PATENT-CLASS-123-102	US-PATENT-APPL-SN-25487
		US-PATENT-CLASS-180-105E	US-PATENT-CLASS-318-308	US-PATENT-CLASS-235-155
N72-20244*	c 11	US-PATENT-CLASS-307-288	US-PATENT-CLASS-318-327	US-PATENT-CLASS-340-347DD
		US-PATENT-CLASS-307-288	US-PATENT-CLASS-318-376	US-PATENT-3,638,002
		US-PATENT-3,630,304	US-PATENT-3,637,312	NASA-CASE-ERC-10307
		NASA-CASE-GSC-10514-1	US-PATENT-APPL-SN-873045	US-PATENT-APPL-SN-39755
N72-20379*	c 14	US-PATENT-APPL-SN-873045	US-PATENT-CLASS-250-208	US-PATENT-CLASS-307-299
		US-PATENT-CLASS-356-138	US-PATENT-CLASS-356-152	US-PATENT-CLASS-307-303
		US-PATENT-CLASS-356-152	US-PATENT-3,637,312	US-PATENT-CLASS-307-311
		NASA-CASE-LAR-10176-1	US-PATENT-APPL-SN-811038	US-PATENT-CLASS-340-173.2
N72-20380*	c 14	US-PATENT-APPL-SN-811038	US-PATENT-CLASS-95-18	US-PATENT-CLASS-340-173LS
		US-PATENT-CLASS-95-18	US-PATENT-3,626,828	US-PATENT-3,623,030
		US-PATENT-CLASS-325-321	NASA-CASE-GSC-10503-1	NASA-CASE-NPO-10743
		US-PATENT-CLASS-325-38	US-PATENT-APPL-SN-789044	US-PATENT-APPL-SN-850587
N72-20381*	c 14	US-PATENT-CLASS-325-4	US-PATENT-CLASS-250-83.6R	US-PATENT-CLASS-340-174CS
		US-PATENT-CLASS-325-58	US-PATENT-3,626,189	US-PATENT-CLASS-340-174LC
		US-PATENT-3,626,298	NASA-CASE-GSC-10607-1	US-PATENT-CLASS-340-174M
		NASA-CASE-ERC-10179	US-PATENT-APPL-SN-27340	US-PATENT-CLASS-340-174SR
N72-20442*	c 15	US-PATENT-APPL-SN-50207	US-PATENT-CLASS-251-129	US-PATENT-3,613,110
		US-PATENT-CLASS-325-445	US-PATENT-CLASS-251-333	NASA-CASE-NPO-11018
		US-PATENT-CLASS-329-161	US-PATENT-3,632,081	US-PATENT-APPL-SN-873259
		US-PATENT-CLASS-329-162	NASA-CASE-NPO-10671	US-PATENT-CLASS-340-347AD
N72-20443*	c 15	US-PATENT-CLASS-332-51W	US-PATENT-APPL-SN-857967	US-PATENT-3,613,111
		US-PATENT-CLASS-333-73W	US-PATENT-CLASS-188-1B	US-PATENT-CLASS-323-DIG.1
		US-PATENT-CLASS-343-772	US-PATENT-CLASS-188-1C	US-PATENT-CLASS-323-22T
		US-PATENT-CLASS-343-773	US-PATENT-CLASS-188-268	US-PATENT-CLASS-323-38
N72-20444*	c 15	US-PATENT-CLASS-343-786	US-PATENT-3,637,051	US-PATENT-3,638,103
		US-PATENT-3,633,110	NASA-CASE-FRC-10038	NASA-CASE-LAR-10545-1
		NASA-CASE-NPO-11243	US-PATENT-APPL-SN-889554	US-PATENT-APPL-SN-31703
		US-PATENT-CLASS-29-412	US-PATENT-CLASS-29-426	US-PATENT-CLASS-343-771
N72-20445*	c 15	US-PATENT-CLASS-29-426	US-PATENT-CLASS-29-527.2	US-PATENT-CLASS-343-893
		US-PATENT-CLASS-29-624	US-PATENT-CLASS-51-216	US-PATENT-3,638,224
		US-PATENT-CLASS-51-216	US-PATENT-CLASS-51-320	NASA-CASE-ARC-10192
		US-PATENT-CLASS-51-320	US-PATENT-CLASS-51-323	US-PATENT-APPL-SN-15024
N72-20445*	c 15	US-PATENT-CLASS-51-323	US-PATENT-3,636,623	US-PATENT-CLASS-307-230
		NASA-CASE-NPO-10704	US-PATENT-APPL-SN-59895	US-PATENT-CLASS-307-295
		US-PATENT-APPL-SN-59895	US-PATENT-CLASS-138-178	US-PATENT-CLASS-328-142
		US-PATENT-CLASS-138-178	US-PATENT-CLASS-285-18	US-PATENT-CLASS-328-167
N72-21246*	c 09	US-PATENT-CLASS-285-18	US-PATENT-CLASS-285-345	US-PATENT-CLASS-330-70R
		US-PATENT-CLASS-285-345	US-PATENT-3,632,140	US-PATENT-CLASS-330-85
		US-PATENT-3,632,140	NASA-CASE-MFS-20698	US-PATENT-CLASS-333-80
		US-PATENT-APPL-SN-3418	US-PATENT-CLASS-100-299	US-PATENT-3,621,407
N72-21247*	c 09	US-PATENT-CLASS-100-299	US-PATENT-CLASS-23-209.1	NASA-CASE-NPO-11134
		US-PATENT-CLASS-23-209.1	US-PATENT-CLASS-264-22	US-PATENT-APPL-SN-883524
		US-PATENT-CLASS-425-77	US-PATENT-CLASS-425-77	US-PATENT-CLASS-318-576
		US-PATENT-3,632,242	NASA-CASE-XLE-04599	US-PATENT-CLASS-324-71R
N72-21248* #	c 09	US-PATENT-CLASS-307-257	US-PATENT-APPL-SN-745337	US-PATENT-CLASS-346-1
		US-PATENT-CLASS-307-259	US-PATENT-CLASS-60-254	US-PATENT-CLASS-346-29
		US-PATENT-CLASS-331-111	US-PATENT-3,629,068	US-PATENT-3,624,659
		US-PATENT-CLASS-331-14	NASA-CASE-XNP-03282	NASA-CASE-KSC-10393
N72-21310*	c 12	US-PATENT-CLASS-331-23	US-PATENT-APPL-SN-745337	US-PATENT-APPL-SN-71047
		US-PATENT-CLASS-331-30	US-P	



		US-PATENT-CLASS-169-36			US-PATENT-APPL-SN-78065			US-PATENT-CLASS-325-29
		US-PATENT-3,613,794			US-PATENT-CLASS-178-52			US-PATENT-CLASS-325-492
N72-21405*	c 14	NASA-CASE-NPO-10832			US-PATENT-CLASS-179-15A			US-PATENT-CLASS-340-171
		US-PATENT-APPL-SN-22265			US-PATENT-CLASS-179-15BL			US-PATENT-CLASS-340-203
		US-PATENT-CLASS-73-141A			US-PATENT-CLASS-307-243			US-PATENT-3,621,290
		US-PATENT-3,623,360			US-PATENT-CLASS-307-251	N72-22203*	c 09	NASA-CASE-XER-11046
N72-21407*	c 14	NASA-CASE-MFS-20642			US-PATENT-CLASS-328-104			US-PATENT-APPL-SN-810579
		US-PATENT-APPL-SN-873793			US-PATENT-CLASS-328-154			US-PATENT-CLASS-321-15
		US-PATENT-CLASS-73-147			US-PATENT-3,614,327			US-PATENT-CLASS-321-18
		US-PATENT-3,623,361	N72-22163*	c 08	NASA-CASE-MSC-13110-1			US-PATENT-CLASS-321-2
N72-21408*	c 14	NASA-CASE-MSC-13332-1			US-PATENT-APPL-SN-23132			US-PATENT-CLASS-321-45
		US-PATENT-APPL-SN-77169			US-PATENT-CLASS-340-347AD			US-PATENT-CLASS-331-117
		US-PATENT-CLASS-250-43.5R			US-PATENT-3,614,772			US-PATENT-3,621,362
		US-PATENT-CLASS-250-83.3H	N72-22164*	c 08	NASA-CASE-NPO-10745	N72-22204*	c 09	NASA-CASE-LAR-10137-1
		US-PATENT-3,614,431			US-PATENT-APPL-SN-878730			US-PATENT-APPL-SN-881041
N72-21409*	c 14	NASA-CASE-MSC-12105-1			US-PATENT-CLASS-178-DIG.28			US-PATENT-CLASS-200-81R
		US-PATENT-APPL-SN-783743			US-PATENT-CLASS-178-DIG.36			US-PATENT-CLASS-200-82C
		US-PATENT-CLASS-356-17			US-PATENT-CLASS-178-6.8			US-PATENT-3,609,271
		US-PATENT-CLASS-356-18			US-PATENT-CLASS-178-7.2R	N72-22235*	c 10	NASA-CASE-GSC-10064-1
		US-PATENT-3,614,228			US-PATENT-3,621,130			US-PATENT-APPL-SN-802812
N72-21462*	c 15	NASA-CASE-NPO-10679	N72-22165*	c 08	NASA-CASE-NPO-11104			US-PATENT-CLASS-343-16M
		US-PATENT-APPL-SN-848282			US-PATENT-APPL-SN-860750			US-PATENT-CLASS-343-7.4
		US-PATENT-CLASS-74-89.15			US-PATENT-CLASS-235-150.52			US-PATENT-CLASS-343-779
		US-PATENT-3,614,898			US-PATENT-CLASS-235-150.53			US-PATENT-CLASS-343-786
N72-21463*	c 15	NASA-CASE-MFS-20413			US-PATENT-CLASS-235-183			US-PATENT-3,623,094
		US-PATENT-APPL-SN-69209			US-PATENT-CLASS-235-194	N72-22236*	c 10	NASA-CASE-GSC-10878-1
		US-PATENT-CLASS-74-469			US-PATENT-CLASS-235-197			US-PATENT-APPL-SN-889423
		US-PATENT-3,620,095			US-PATENT-CLASS-340-347R			US-PATENT-CLASS-307-206
N72-21464*	c 15	NASA-CASE-ARC-10176-1			US-PATENT-3,621,228			US-PATENT-CLASS-307-215
		US-PATENT-APPL-SN-889583	N72-22166*	c 08	NASA-CASE-NPO-10560			US-PATENT-CLASS-307-322
		US-PATENT-CLASS-324-57R			US-PATENT-APPL-SN-856282			US-PATENT-CLASS-307-323
		US-PATENT-CLASS-324-64			US-PATENT-CLASS-235-153			US-PATENT-3,621,277
		US-PATENT-CLASS-324-71R			US-PATENT-CLASS-324-73AT	N72-22245*	c 11	NASA-CASE-NPO-12109
		US-PATENT-3,624,496			US-PATENT-CLASS-340-347AD			US-PATENT-APPL-SN-690172
N72-21465*	c 15	NASA-CASE-GSC-10218-1			US-PATENT-3,603,772			US-PATENT-CLASS-230-221
		US-PATENT-APPL-SN-15022	N72-22167*	c 08	NASA-CASE-NPO-11082			US-PATENT-CLASS-230-54
		US-PATENT-CLASS-141-23			US-PATENT-APPL-SN-868529			US-PATENT-3,612,391
		US-PATENT-CLASS-195-127			US-PATENT-CLASS-235-152	N72-22246*	c 11	NASA-CASE-XLA-07430
		US-PATENT-CLASS-222-135			US-PATENT-CLASS-340-146.1			US-PATENT-APPL-SN-867841
		US-PATENT-CLASS-222-309			US-PATENT-CLASS-340-348			US-PATENT-CLASS-73-147
		US-PATENT-CLASS-222-71			US-PATENT-3,609,327			US-PATENT-3,620,076
		US-PATENT-CLASS-23-253R	N72-22195*	c 09	NASA-CASE-MFS-14710	N72-22247*	c 11	NASA-CASE-NPO-11013
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		US-PATENT-APPL-SN-89212			US-PATENT-APPL-SN-889422			NASA-CASE-LEW-10450-1
		US-PATENT-CLASS-178-50			US-PATENT-CLASS-117-200			US-PATENT-APPL-SN-880271
		US-PATENT-CLASS-178-158C			US-PATENT-CLASS-136-89			US-PATENT-CLASS-75-0.58B
		US-PATENT-CLASS-179-15FD			US-PATENT-CLASS-29-198			US-PATENT-CLASS-75-206
		US-PATENT-CLASS-325-62			US-PATENT-3,664,874			US-PATENT-CLASS-75-213
		US-PATENT-CLASS-332-21	N72-25260*	c 09	NASA-CASE-NPO-11283			US-PATENT-3,649,242
		US-PATENT-3,659,053			US-PATENT-APPL-SN-118270	N72-25450*	c 15	NASA-CASE-NPO-11202
N72-25209*	c 08	NASA-CASE-NPO-11194			US-PATENT-CLASS-310-4			US-PATENT-APPL-SN-66004
		US-PATENT-APPL-SN-63532			US-PATENT-3,663,839			US-PATENT-CLASS-285-DIG.21
		US-PATENT-CLASS-343-12R	N72-25261*	c 09	NASA-CASE-ERC-10224			US-PATENT-CLASS-285-3
		US-PATENT-CLASS-343-14			US-PATENT-APPL-SN-868775			US-PATENT-CLASS-285-316
		US-PATENT-CLASS-343-6.5R			US-PATENT-CLASS-29-492			US-PATENT-CLASS-285-33
		US-PATENT-3,659,292			US-PATENT-CLASS-29-497			US-PATENT-CLASS-339-45M
N72-25210*	c 08	NASA-CASE-NPO-10636			US-PATENT-CLASS-29-498			US-PATENT-CLASS-339-91B
		US-PATENT-APPL-SN-77221			US-PATENT-CLASS-29-502			US-PATENT-3,656,781
		US-PATENT-CLASS-235-152			US-PATENT-CLASS-29-589	N72-25451*	c 15	NASA-CASE-NPO-10606
		US-PATENT-CLASS-340-146.1AL			US-PATENT-CLASS-29-628			US-PATENT-APPL-SN-8636
		US-PATENT-3,662,337			US-PATENT-3,665,589			US-PATENT-CLASS-251-360
N72-25247*	c 09	NASA-CASE-LAR-10163-1	N72-25262*	c 09	NASA-CASE-NPO-11078			US-PATENT-3,658,295
		US-PATENT-APPL-SN-73310			US-PATENT-APPL-SN-82280	N72-25452*	c 15	NASA-CASE-LEW-10965-1
		US-PATENT-CLASS-343-708			US-PATENT-CLASS-307-103			US-PATENT-APPL-SN-876588
		US-PATENT-CLASS-343-771			US-PATENT-CLASS-307-83			US-PATENT-CLASS-117-124C
		US-PATENT-CLASS-343-873			US-PATENT-CLASS-323-48			US-PATENT-CLASS-117-152
		US-PATENT-3,653,052			US-PATENT-CLASS-323-82			US-PATENT-CLASS-117-16R
N72-25248*	c 09	NASA-CASE-NPO-11342			US-PATENT-3,663,828			US-PATENT-CLASS-117-37
		US-PATENT-APPL-SN-89209	N72-25284*	c 11	NASA-CASE-LAR-10507-1			US-PATENT-CLASS-117-47R
		US-PATENT-CLASS-340-172.5			US-PATENT-APPL-SN-874177			US-PATENT-CLASS-117-622
		US-PATENT-CLASS-340-324A			US-PATENT-CLASS-195-127			US-PATENT-CLASS-117-93.3
		US-PATENT-3,648,250			US-PATENT-3,649,462			US-PATENT-CLASS-204-157.18AG
N72-25249*	c 09	NASA-CASE-GSC-10656-1	N72-25287*	c 11	NASA-CASE-LAR-10546-1			US-PATENT-CLASS-204-49
		US-PATENT-APPL-SN-59969			US-PATENT-APPL-SN-32664			US-PATENT-CLASS-250-65F
		US-PATENT-CLASS-321-2			US-PATENT-CLASS-287-54A			US-PATENT-CLASS-96-36.2
		US-PATENT-CLASS-323-DIG.1			US-PATENT-CLASS-52-648			US-PATENT-3,658,569
		US-PATENT-CLASS-323-17			US-PATENT-CLASS-52-655	N72-25453*	c 15	NASA-CASE-KSC-10513
		US-PATENT-CLASS-323-22T			US-PATENT-3,665,670			US-PATENT-APPL-SN-61535
		US-PATENT-3,621,372	N72-25288*	c 11	NASA-CASE-MFS-20434			US-PATENT-CLASS-187-1
N72-25250*	c 09	NASA-CASE-KSC-10565			US-PATENT-APPL-SN-55534			US-PATENT-CLASS-187-20
		US-PATENT-APPL-SN-88517			US-PATENT-CLASS-73-140			US-PATENT-CLASS-187-95
		US-PATENT-CLASS-315-135			US-PATENT-CLASS-73-161			US-PATENT-CLASS-254-190
		US-PATENT-CLASS-315-349			US-PATENT-3,665,758			US-PATENT-3,666,051
		US-PATENT-CLASS-330-2	N72-25292*	c 12	NASA-CASE-NPO-11556	N72-25454*	c 15	NASA-CASE-MSC-12233-1
		US-PATENT-CLASS-330-59			US-PATENT-APPL-SN-82648			US-PATENT-APPL-SN-73422
		US-PATENT-CLASS-340-332			US-PATENT-CLASS-210-188			US-PATENT-CLASS-52-169
		US-PATENT-3,659,148			US-PATENT-CLASS-310-11			US-PATENT-CLASS-52-173
N72-25251*	c 09	NASA-CASE-ERC-10048			US-PATENT-3,648,083			US-PATENT-CLASS-52-594
		US-PATENT-APPL-SN-10329	N72-25323*	c 13	NASA-CASE-NPO-11373			US-PATENT-3,665,669
		US-PATENT-CLASS-307-261			US-PATENT-APPL-SN-81095	N72-25455*	c 15	NASA-CASE-NPO-11095
		US-PATENT-CLASS-321-18			US-PATENT-CLASS-73-421.5R			US-PATENT-APPL-SN-19585
		US-PATENT-CLASS-321-2			US-PATENT-CLASS-73-422GC			US-PATENT-CLASS-239-424
		US-PATENT-3,659,184			US-PATENT-CLASS-73-422TC			US-PATENT-CLASS-60-258
N72-25252*	c 09	NASA-CASE-ERC-10268			US-PATENT-3,662,604			US-PATENT-CLASS-60-39.74A
		US-PATENT-APPL-SN-39342	N72-25409*	c 14	NASA-CASE-ERC-10174			US-PATENT-3,662,547
		US-PATENT-CLASS-321-11			US-PATENT-APPL-SN-39344	N72-25456*	c 15	NASA-CASE-NPO-11222

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N72-29172*	c 09	US-PATENT-APPL-SN-796685	N72-32688*	c 25	NASA-CASE-MFS-20589	N73-12264*	c 11	US-PATENT-CLASS-325-480
		US-PATENT-CLASS-106-39			US-PATENT-APPL-SN-103077			NASA-CASE-LAR-10348-1
		US-PATENT-CLASS-106-46			US-PATENT-CLASS-313-231			US-PATENT-APPL-SN-70032
		US-PATENT-CLASS-117-212			US-PATENT-CLASS-315-111			US-PATENT-CLASS-73-147
		US-PATENT-CLASS-117-217			US-PATENT-3,693,002			US-PATENT-3,695,101
		US-PATENT-CLASS-29-25.42			NASA-CASE-ERC-10338			NASA-CASE-NPO-10890
		US-PATENT-3,649,353			US-PATENT-APPL-SN-50339			US-PATENT-APPL-SN-99903
		NASA-CASE-LAR-10511-1			US-PATENT-CLASS-23-109			US-PATENT-CLASS-137-559
		US-PATENT-APPL-SN-41345			US-PATENT-3,679,360			US-PATENT-CLASS-219-203
		US-PATENT-CLASS-333-24R			NASA-CASE-MS-13540-1			US-PATENT-CLASS-219-522
N72-29464*	c 14	US-PATENT-CLASS-333-98P	N72-33096*	c 05	US-PATENT-APPL-SN-68023	N73-12265*	c 11	US-PATENT-CLASS-52-171
		US-PATENT-CLASS-333-98P			US-PATENT-CLASS-99-80PS			US-PATENT-3,696,833
		US-PATENT-3,676,809			US-PATENT-3,692,533			NASA-CASE-GSC-10903-1
		NASA-CASE-ARC-10017-1			NASA-CASE-MS-12259-2			US-PATENT-APPL-SN-114846
		US-PATENT-APPL-SN-55536			US-PATENT-APPL-SN-61895			US-PATENT-CLASS-250-41.9G
		US-PATENT-CLASS-250-41.8D			US-PATENT-APPL-SN-853763			US-PATENT-CLASS-250-41.9S
		US-PATENT-CLASS-250-71.5R			US-PATENT-CLASS-325-373			US-PATENT-CLASS-73-421.5
		US-PATENT-CLASS-313-356			US-PATENT-3,694,753			US-PATENT-3,700,893
		US-PATENT-3,676,674			NASA-CASE-NPO-11630			NASA-CASE-LAR-10728-1
		NASA-CASE-XLE-10326-2			US-PATENT-APPL-SN-143078			US-PATENT-APPL-SN-112998
N72-29488*	c 15	US-PATENT-APPL-SN-54540	N72-33172*	c 08	US-PATENT-CLASS-179-15.55R	N73-12445*	c 14	US-PATENT-CLASS-250-83.3H
		US-PATENT-APPL-SN-723465			US-PATENT-3,694,581			US-PATENT-CLASS-250-83.3R
		US-PATENT-CLASS-277-25			NASA-CASE-NPO-11129			US-PATENT-CLASS-250-83R
		US-PATENT-CLASS-277-27			US-PATENT-APPL-SN-883523			US-PATENT-CLASS-250-83R
		US-PATENT-CLASS-277-74			US-PATENT-CLASS-307-262			US-PATENT-3,700,897
		US-PATENT-3,675,935			US-PATENT-CLASS-307-295			NASA-CASE-NPO-11239
		NASA-CASE-MS-13335-1			US-PATENT-CLASS-328-155			US-PATENT-APPL-SN-89211
		US-PATENT-APPL-SN-55806			US-PATENT-CLASS-328-155			US-PATENT-CLASS-356-106
		US-PATENT-CLASS-55-16			US-PATENT-CLASS-328-24			US-PATENT-CLASS-356-114
		US-PATENT-CLASS-55-55			US-PATENT-3,621,406			US-PATENT-3,700,334
N72-31141*	c 06	US-PATENT-3,678,654	N72-33205*	c 09	NASA-CASE-GSC-10835-1	N73-12447*	c 14	NASA-CASE-NPO-11493
		NASA-CASE-ARC-10308-1			US-PATENT-APPL-SN-116778			US-PATENT-APPL-SN-151413
		US-PATENT-APPL-SN-134568			US-PATENT-CLASS-317-101A			US-PATENT-CLASS-136-224
		US-PATENT-CLASS-250-43.5R			US-PATENT-CLASS-317-235			US-PATENT-3,700,503
		US-PATENT-CLASS-356-51			US-PATENT-CLASS-317-235A			NASA-CASE-KSC-10615
		US-PATENT-3,678,899			US-PATENT-CLASS-317-235AJ			US-PATENT-APPL-SN-103078
		NASA-CASE-NPO-11016			US-PATENT-3,694,700			US-PATENT-CLASS-244-15B
		US-PATENT-APPL-SN-889584			NASA-CASE-GSC-11340-1			US-PATENT-CLASS-244-135
		US-PATENT-CLASS-235-150.1			US-PATENT-APPL-SN-107379			US-PATENT-CLASS-62-45
		US-PATENT-CLASS-235-151.1			US-PATENT-CLASS-330-12			US-PATENT-CLASS-62-7
N72-31226*	c 08	US-PATENT-CLASS-235-92MT	N72-33230*	c 10	US-PATENT-CLASS-331-115	N73-12486*	c 15	US-PATENT-3,697,021
		US-PATENT-CLASS-323-19			US-PATENT-CLASS-331-116R			NASA-CASE-FRC-10019
		US-PATENT-CLASS-340-347AD			US-PATENT-CLASS-333-80T			US-PATENT-APPL-SN-880398
		US-PATENT-3,681,581			US-PATENT-3,693,105			US-PATENT-CLASS-204-192
		NASA-CASE-ERC-10214			NASA-CASE-MFS-20760			US-PATENT-3,700,575
		US-PATENT-APPL-SN-863914			US-PATENT-APPL-SN-99174			NASA-CASE-ARC-10345-1
		US-PATENT-CLASS-343-770			US-PATENT-CLASS-73-141AB			US-PATENT-APPL-SN-193671
		US-PATENT-CLASS-343-771			US-PATENT-CLASS-73-85			US-PATENT-CLASS-287-85R
		US-PATENT-CLASS-343-786			US-PATENT-3,693,418			US-PATENT-CLASS-308-2A
		US-PATENT-CLASS-343-787			NASA-CASE-XGS-07805			US-PATENT-CLASS-74-5F
N72-31235*	c 09	US-PATENT-CLASS-343-853	N72-33377*	c 14	US-PATENT-APPL-SN-104884	N73-12488*	c 15	US-PATENT-3,700,291
		US-PATENT-3,680,142			US-PATENT-CLASS-308-10			NASA-CASE-MS-12357
		NASA-CASE-KSC-10647-1			US-PATENT-3,694,041			US-PATENT-APPL-SN-662763
		US-PATENT-APPL-SN-774691			NASA-CASE-NPO-11340			US-PATENT-CLASS-264-102
		US-PATENT-CLASS-178-7.5E			US-PATENT-APPL-SN-147997			US-PATENT-CLASS-264-28
		US-PATENT-CLASS-315-22R			US-PATENT-CLASS-137-13			US-PATENT-CLASS-264-36
		US-PATENT-CLASS-315-30R			US-PATENT-CLASS-137-81.5			US-PATENT-CLASS-264-40
		US-PATENT-CLASS-330-27R			US-PATENT-CLASS-60-1			US-PATENT-3,697,630
		US-PATENT-3,678,191			US-PATENT-CLASS-60-36			NASA-CASE-XLA-08914
		NASA-CASE-ERC-10087-2			US-PATENT-3,693,348			US-PATENT-APPL-SN-810576
N72-31273*	c 10	US-PATENT-APPL-SN-738315	N72-33477*	c 15	US-PATENT-CLASS-60-1	N73-12492* #	c 15	NASA-CASE-XLA-08914
		US-PATENT-APPL-SN-91642			US-PATENT-CLASS-60-36			US-PATENT-APPL-SN-810576
		US-PATENT-CLASS-29-588			NASA-CASE-LEW-10518-1			NASA-CASE-NPO-13086-1
		US-PATENT-CLASS-317-234D			US-PATENT-APPL-SN-863280			US-PATENT-APPL-SN-292477
		US-PATENT-CLASS-317-234G			US-PATENT-CLASS-176-11			NASA-CASE-LAR-10539-1
		US-PATENT-CLASS-317-235M			US-PATENT-3,694,313			US-PATENT-APPL-SN-136085
		US-PATENT-CLASS-317-235R			NASA-CASE-GSC-11291-1			US-PATENT-CLASS-23-230R
		US-PATENT-3,686,542			US-PATENT-APPL-SN-102412			US-PATENT-3,701,631
		NASA-CASE-LAR-10061-1			US-PATENT-CLASS-250-83.6R			NASA-CASE-MFS-20408
		US-PATENT-APPL-SN-104047			US-PATENT-3,694,655			US-PATENT-APPL-SN-71048
N72-31448*	c 14	US-PATENT-CLASS-251-331	N72-33476*	c 15	US-PATENT-CLASS-161-93	N73-12489*	c 15	US-PATENT-3,700,538
		US-PATENT-CLASS-251-86			US-PATENT-APPL-SN-95183			NASA-CASE-MS-12391
		US-PATENT-3,680,830			US-PATENT-CLASS-235-152			US-PATENT-APPL-SN-108465
		NASA-CASE-GSC-10945-1			US-PATENT-CLASS-331-78			US-PATENT-CLASS-244-155
		US-PATENT-CLASS-317-234D			US-PATENT-CLASS-340-148.1AL			US-PATENT-3,700,193
		US-PATENT-CLASS-317-234G			US-PATENT-3,700,869			NASA-CASE-GSC-11077-1
		US-PATENT-CLASS-317-235M			US-PATENT-APPL-SN-98772			US-PATENT-APPL-SN-127618
		US-PATENT-CLASS-317-235R			US-PATENT-CLASS-235-155			US-PATENT-CLASS-244-32
		US-PATENT-3,686,542			US-PATENT-CLASS-340-347DD			US-PATENT-3,698,667
		NASA-CASE-LAR-10061-1			US-PATENT-3,697,733			NASA-CASE-MS-13604-1
N72-31483*	c 15	US-PATENT-APPL-SN-75431	N72-33681*	c 24	NASA-CASE-NPO-11371	N73-12495* #	c 15	US-PATENT-APPL-SN-78717
		US-PATENT-CLASS-60-23			US-PATENT-APPL-SN-117575			US-PATENT-CLASS-128-2N
		US-PATENT-CLASS-60-26			US-PATENT-CLASS-340-148.1AQ			US-PATENT-CLASS-273-1E
		US-PATENT-3,678,685			US-PATENT-CLASS-340-148.1AV			US-PATENT-CLASS-35-22R
		NASA-CASE-NPO-11361			US-PATENT-3,697,950			US-PATENT-3,698,385
		US-PATENT-APPL-SN-112988			NASA-CASE-ERC-10412-1			NASA-CASE-GSC-11214-1
		US-PATENT-CLASS-343-781			US-PATENT-APPL-SN-72024			US-PATENT-APPL-SN-115134
		US-PATENT-CLASS-343-837			US-PATENT-CLASS-343-11R			US-PATENT-CLASS-117-35R
		US-PATENT-CLASS-343-840			US-PATENT-CLASS-343-11VB			US-PATENT-3,702,775
		US-PATENT-CLASS-343-915			US-PATENT-CLASS-343-50P			NASA-CASE-XNP-08124-2
N72-31637*	c 21	US-PATENT-3,680,144	N72-33696*	c 25	US-PATENT-3,696,418	N73-12547*	c 17	US-PATENT-APPL-SN-97829
		NASA-CASE-MFS-15162			NASA-CASE-NPO-13091-1			US-PATENT-CLASS-75-66
		US-PATENT-APPL-SN-100639			US-PATENT-APPL-SN-290022			US-PATENT-3,702,762
		US-PATENT-CLASS-350-79			NASA-CASE-NPO-11631			NASA-CASE-NPO-11302-1
		US-PATENT-CLASS-356-241			US-PATENT-APPL-SN-123253			US-PATENT-APPL-SN-70967
		US-PATENT-3,694,094			US-PATENT-CLASS-179-1P			US-PATENT-CLASS-178-69.5
		NASA-CASE-LAR-10541-1			US-PATENT-CLASS-325-473			US-PATENT-CLASS-235-150.53
		US-PATENT-APPL-SN-138229						
		US-PATENT-CLASS-118-49.1						
		US-PATENT-CLASS-204-298						
US-PATENT-CLASS-219-121P								
N72-32452*	c 14	US-PATENT-CLASS-219-273	N72-32487*	c 15		N73-13129*	c 06	
N72-32487*	c 15		N73-12214* #	c 09		N73-13128*	c 06	
N72-32487*	c 15		N73-12244*	c 10		N73-13149*	c 07	

			US-PATENT-CLASS-235-181				US-PATENT-CLASS-60-37				US-PATENT-CLASS-174-525
			US-PATENT-CLASS-325-325				US-PATENT-3,702,532				US-PATENT-CLASS-28-569
			US-PATENT-CLASS-340-148.1		N73-13489*	c 16	NASA-CASE-HQN-10654-1				US-PATENT-CLASS-28-591
			US-PATENT-3,701,894				US-PATENT-APPL-SN-182978				US-PATENT-CLASS-317-234A
N73-13187*	c 08		NASA-CASE-GSC-10975-1				US-PATENT-CLASS-324-5R				US-PATENT-CLASS-317-234G
			US-PATENT-APPL-SN-100996				US-PATENT-CLASS-331-94				US-PATENT-3,705,255
			US-PATENT-CLASS-340-172.5				US-PATENT-3,702,972	N73-14584*	c 18		NASA-CASE-LAR-10894-1
			US-PATENT-3,702,463		N73-13562*	c 18	NASA-CASE-ARC-10196-1				US-PATENT-APPL-SN-189375
N73-13208*	c 09		NASA-CASE-LEW-11182-1				US-PATENT-APPL-SN-115082				US-PATENT-CLASS-106-39R
			US-PATENT-APPL-SN-188285				US-PATENT-CLASS-260-2.5F				US-PATENT-CLASS-106-55
			US-PATENT-CLASS-315-3.5				US-PATENT-3,702,841				US-PATENT-CLASS-106-58
			US-PATENT-CLASS-315-5.38		N73-13643*	c 21	NASA-CASE-HQN-10703				US-PATENT-CLASS-106-63
			US-PATENT-3,702,951				US-PATENT-APPL-SN-156724				US-PATENT-CLASS-264-DIG.36
N73-13209*	c 09		NASA-CASE-XLA-05099				US-PATENT-CLASS-340-27NA				US-PATENT-CLASS-264-65
			US-PATENT-APPL-SN-88798				US-PATENT-CLASS-340-33				US-PATENT-3,706,583
			US-PATENT-CLASS-235-152				US-PATENT-CLASS-340-97	N73-14692*	c 21		NASA-CASE-ERC-10392
			US-PATENT-CLASS-307-207				US-PATENT-CLASS-343-112CA				US-PATENT-APPL-SN-36534
			US-PATENT-CLASS-307-215				US-PATENT-3,699,511				US-PATENT-CLASS-340-27AT
			US-PATENT-3,700,868		N73-13644*	c 21	NASA-CASE-NPO-11481				US-PATENT-3,706,970
N73-13235*	c 10		NASA-CASE-KSC-10003				US-PATENT-APPL-SN-134571	N73-14853*	c 31		NASA-CASE-GSC-10590-1
			US-PATENT-APPL-SN-60883				US-PATENT-CLASS-179-100.2A				US-PATENT-APPL-SN-130353
			US-PATENT-CLASS-178-DIG.6				US-PATENT-CLASS-340-174.1R				US-PATENT-CLASS-102-49.5
			US-PATENT-CLASS-178-6				US-PATENT-CLASS-346-138				US-PATENT-3,706,281
			US-PATENT-CLASS-307-242				US-PATENT-CLASS-346-74MD	N73-14854*	c 31		NASA-CASE-MS-12433
			US-PATENT-CLASS-307-259				US-PATENT-CLASS-74-5.22				US-PATENT-APPL-SN-103551
			US-PATENT-CLASS-328-104				US-PATENT-3,697,968				US-PATENT-CLASS-244-155
			US-PATENT-CLASS-328-154		N73-13660*	c 23	NASA-CASE-MFS-20809				US-PATENT-3,702,688
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N73-31988*	c 03	US-PATENT-CLASS-165-47	N73-32143*	c 10	US-PATENT-CLASS-165-96	N73-32144*	c 10	US-PATENT-CLASS-165-155	N73-32361*	c 15	US-PATENT-CLASS-117-151
		US-PATENT-CLASS-244-15S			US-PATENT-CLASS-178-18			US-PATENT-CLASS-117-160R			
		US-PATENT-3,749,156			US-PATENT-3,758,718			US-PATENT-CLASS-117-66R			
		NASA-CASE-MSC-12396-1			NASA-CASE-NPO-11703-1			US-PATENT-CLASS-29-527.2			
		US-PATENT-APPL-SN-258331			US-PATENT-APPL-SN-223560			US-PATENT-CLASS-72-53			
		US-PATENT-CLASS-307-18			US-PATENT-CLASS-340-166			US-PATENT-3,754,976			
		US-PATENT-CLASS-307-28			US-PATENT-CLASS-340-173			NASA-CASE-XNP-01188			
		US-PATENT-CLASS-307-29			US-PATENT-CLASS-340-223			US-PATENT-APPL-SN-155596			
		US-PATENT-CLASS-307-38			US-PATENT-CLASS-340-415			US-PATENT-CLASS-317-158			
		US-PATENT-3,755,688			US-PATENT-3,760,394			US-PATENT-3,262,025			
N73-32011*	c 05	NASA-CASE-GSC-11169-2	N73-32145*	c 10	NASA-CASE-MFS-21465-1	N73-32362*	c 15	NASA-CASE-XNP-07169	N73-32391*	c 16	US-PATENT-APPL-SN-486884
		US-PATENT-APPL-SN-139094			US-PATENT-APPL-SN-218965			US-PATENT-CLASS-175-26			
		US-PATENT-APPL-SN-60882			US-PATENT-CLASS-307-271			US-PATENT-3,375,885			
		US-PATENT-CLASS-195-127			US-PATENT-CLASS-318-230			NASA-CASE-GSC-11222-1			
		US-PATENT-3,756,920			US-PATENT-CLASS-318-231			US-PATENT-APPL-SN-251621			
N73-32012*	c 05	NASA-CASE-MSC-12609-1	N73-32152*	c 11	US-PATENT-CLASS-318-341	N73-32414*	c 17	US-PATENT-CLASS-315-012	N73-32415*	c 17	US-PATENT-CLASS-307-151
		US-PATENT-APPL-SN-750031			US-PATENT-CLASS-331-135			US-PATENT-CLASS-315-01G.2			
		US-PATENT-CLASS-128-1A			US-PATENT-3,760,248			US-PATENT-CLASS-315-101			
		US-PATENT-CLASS-2-2.1A			NASA-CASE-MSC-13789-1			US-PATENT-CLASS-315-258			
		US-PATENT-CLASS-2-81			US-PATENT-APPL-SN-166487			US-PATENT-CLASS-315-356			
N73-32013*	c 05	US-PATENT-3,751,727	N73-32317*	c 14	US-PATENT-CLASS-102-95	N73-32437*	c 18	US-PATENT-CLASS-330-4.3	N73-32528*	c 22	US-PATENT-CLASS-331-94.5
		NASA-CASE-MFS-16570-1			US-PATENT-CLASS-188-1C			US-PATENT-CLASS-3762.884			
		US-PATENT-APPL-SN-228150			US-PATENT-CLASS-89-8			US-PATENT-3,758,877			
		US-PATENT-CLASS-3-1.1			US-PATENT-3,763,740			NASA-CASE-LEW-11267-1			
		US-PATENT-CLASS-3-12			NASA-CASE-NPO-12128-1			US-PATENT-APPL-SN-190316			
N73-32014*	c 05	US-PATENT-CLASS-3-2	N73-32318*	c 14	US-PATENT-APPL-SN-841845	N73-32437*	c 18	US-PATENT-CLASS-29-196.2	N73-32528*	c 22	US-PATENT-CLASS-29-196.6
		US-PATENT-CLASS-3-6			US-PATENT-CLASS-250-207			US-PATENT-CLASS-29-196.6			
		US-PATENT-3,751,733			US-PATENT-CLASS-250-83.3R			US-PATENT-CLASS-29-197			
		NASA-CASE-MSC-11561-1			US-PATENT-CLASS-313-104			US-PATENT-3,762,884			
		US-PATENT-APPL-SN-146940			US-PATENT-3,758,781			NASA-CASE-LEW-10436-1			
N73-32015*	c 05	US-PATENT-CLASS-137-535	N73-32319*	c 14	US-PATENT-CLASS-10730-1	N73-32437*	c 18	US-PATENT-APPL-SN-221093	N73-32528*	c 22	US-PATENT-CLASS-73-170
		US-PATENT-CLASS-272-DIG.1			US-PATENT-APPL-SN-248469			US-PATENT-CLASS-75-171			
		US-PATENT-CLASS-272-DIG.4			US-PATENT-CLASS-324-72			US-PATENT-CLASS-75-171			
		US-PATENT-CLASS-272-DIG.5			US-PATENT-3,760,268			US-PATENT-3,762,918			
		US-PATENT-CLASS-272-79C			NASA-CASE-KSC-10728-1			NASA-CASE-MFS-20861-1			
N73-32015*	c 05	US-PATENT-CLASS-91-186	N73-32319*	c 14	US-PATENT-APPL-SN-292682	N73-32437*	c 18	US-PATENT-APPL-SN-160860	N73-32528*	c 22	US-PATENT-CLASS-75-135
		US-PATENT-3,758,112			US-PATENT-CLASS-95-11			US-PATENT-3,752,665			
		NASA-CASE-MSC-13436-1			US-PATENT-CLASS-95-11.5			NASA-CASE-XLE-00209			
		US-PATENT-APPL-SN-173190			US-PATENT-3,759,152			US-PATENT-APPL-SN-60276			
		US-PATENT-CLASS-128-2.07			NASA-CASE-GSC-11188-1			US-PATENT-CLASS-176-169			
N73-32029*	c 06	US-PATENT-CLASS-128-2.08	N73-32320*	c 14	US-PATENT-APPL-SN-244440	N73-32571*	c 26	US-PATENT-3,759,787	N73-32571*	c 26	NASA-CASE-LEW-11015
		US-PATENT-CLASS-73-194E			US-PATENT-APPL-SN-80029			US-PATENT-APPL-SN-235266			
		US-PATENT-CLASS-73-194M			US-PATENT-CLASS-29-195Y			US-PATENT-CLASS-174-DIG.6			
		US-PATENT-3,759,249			US-PATENT-3,759,872			US-PATENT-CLASS-174-126C			
		NASA-CASE-NPO-10998-1			NASA-CASE-XNP-06933			US-PATENT-CLASS-29-599			
N73-32029*	c 06	NASA-CASE-NPO-10999-1	N73-32321*	c 14	US-PATENT-APPL-SN-488381	N73-32606*	c 28	US-PATENT-CLASS-335-216	N73-32606*	c 28	US-PATENT-3,763,552
		US-PATENT-APPL-SN-145027			US-PATENT-CLASS-73-81			NASA-CASE-NPO-12070-1			
		US-PATENT-CLASS-252-431N			US-PATENT-3,379,052			US-PATENT-APPL-SN-153542			
		US-PATENT-CLASS-252-431R			NASA-CASE-LAR-10319-1			US-PATENT-CLASS-165-105			
		US-PATENT-CLASS-260-47UP			US-PATENT-APPL-SN-197870			US-PATENT-CLASS-165-141			
N73-32030*	c 06	US-PATENT-CLASS-260-567.6M	N73-32322*	c 14	US-PATENT-CLASS-346-110	N73-32749*	c 31	US-PATENT-CLASS-165-185	N73-32750*	c 31	US-PATENT-CLASS-165-185
		US-PATENT-CLASS-260-93.5A			US-PATENT-CLASS-95-42			US-PATENT-CLASS-239-127.1			
		US-PATENT-CLASS-260-93.5S			US-PATENT-3,757,659			US-PATENT-CLASS-60-267			
		US-PATENT-CLASS-260-94.2M			NASA-CASE-LAR-10440-1			US-PATENT-3,759,443			
		US-PATENT-CLASS-260-94.2R			US-PATENT-APPL-SN-229413			NASA-CASE-ERC-10365-1			
N73-32030*	c 06	US-PATENT-CLASS-260-94.7R	N73-32323*	c 14	US-PATENT-CLASS-73-103	N73-32749*	c 31	US-PATENT-APPL-SN-99198	N73-32750*	c 31	US-PATENT-CLASS-287-92
		US-PATENT-3,755,283			US-PATENT-CLASS-73-94			US-PATENT-CLASS-52-109			
		NASA-CASE-MFS-20979-2			US-PATENT-3,757,568			US-PATENT-CLASS-52-64			
		US-PATENT-APPL-SN-100774			NASA-CASE-LAR-02743			US-PATENT-CLASS-52-64E			
		US-PATENT-APPL-SN-219590			US-PATENT-APPL-SN-404212			US-PATENT-CLASS-52-80			
N73-32081*	c 08	US-PATENT-CLASS-260-448.2D	N73-32324*	c 14	US-PATENT-CLASS-313-7	N73-32750*	c 31	US-PATENT-3,757,476	N73-32750*	c 31	NASA-CASE-LEW-11101-1
		US-PATENT-3,763,204			US-PATENT-CLASS-310,699			US-PATENT-APPL-SN-175983			
		NASA-CASE-MSC-12458-1			NASA-CASE-XNP-04231			US-PATENT-CLASS-244-15S			
		US-PATENT-APPL-SN-188927			US-PATENT-APPL-SN-362261			US-PATENT-CLASS-244-15C			
		US-PATENT-CLASS-235-152IE			US-PATENT-CLASS-250-41.9			US-PATENT-CLASS-47-1.4			
N73-32107*	c 09	US-PATENT-CLASS-340-347DA	N73-32325*	c 14	US-PATENT-3,334,225	N73-32818*	c 33	US-PATENT-3,749,332	N73-32818*	c 33	NASA-CASE-NPO-11942-1
		US-PATENT-3,754,236			US-PATENT-CLASS-10483-1			US-PATENT-APPL-SN-266886			
		NASA-CASE-MFS-20207-1			US-PATENT-APPL-SN-184090			US-PATENT-CLASS-165-106			
		US-PATENT-APPL-SN-239574			US-PATENT-CLASS-73-12			US-PATENT-CLASS-165-32			
		US-PATENT-CLASS-318-254			US-PATENT-CLASS-73-170R			US-PATENT-CLASS-165-96			
N73-32108*	c 09	US-PATENT-CLASS-318-328	N73-32326*	c 14	US-PATENT-3,763,691	N73-33076*	c 06	US-PATENT-CLASS-244-15S	N73-33076*	c 06	US-PATENT-3,763,928
		US-PATENT-3,757,183			US-PATENT-3,751,980			NASA-CASE-NPO-10767-1			
		NASA-CASE-GSC-11368-1			NASA-CASE-LAR-10483-1			US-PATENT-APPL-SN-241061			
		US-PATENT-APPL-SN-237029			US-PATENT-APPL-SN-184090			US-PATENT-APPL-SN-770417			
		US-PATENT-CLASS-138-24			US-PATENT-CLASS-73-12			US-PATENT-CLASS-260-77.5AP			
N73-32109*	c 09	US-PATENT-3,759,746	N73-32358*	c 15	US-PATENT-CLASS-317-108R	N73-33361*	c 14	US-PATENT-3,755,265	N73-33361*	c 14	NASA-CASE-ARC-10468-1
		NASA-CASE-GSC-11394-1			US-PATENT-CLASS-308-35			US-PATENT-CLASS-355-18			
		US-PATENT-APPL-SN-292698			US-PATENT-CLASS-308-9			US-PATENT-CLASS-95-12			
		US-PATENT-CLASS-138-89			US-PATENT-CLASS-308-9			US-PATENT-3,764,209			
		US-PATENT-CLASS-250-212			US-PATENT-CLASS-308-9			NASA-CASE-LEW-11026-1			
N73-32110*	c 09	US-PATENT-CLASS-321-1.5	N73-32359*	c 15	US-PATENT-CLASS-117-105	N73-33383*	c 15	US-PATENT-APPL-SN-196970	N73-33383*	c 15	US-PATENT-CLASS-29-487
		US-PATENT-3,760,257			US-PATENT-CLASS-117-130R			US-PATENT-CLASS-29-494			
		NASA-CASE-KSC-10729-1			US-PATENT-CLASS-117-138.8R			US-PATENT-CLASS-29-497.5			
		US-PATENT-APPL-SN-221714			US-PATENT-CLASS-117-138.8R			US-PATENT-CLASS-29-497.5			
		US-PATENT-CLASS-343-112R			US-PATENT-CLASS-117-138.8R			US-PATENT-CLASS-29-497.5			
N73-32111*	c 09	US-PATENT-CLASS-343-113R	N73-32360*	c 15	US-PATENT-CLASS-117-138.8R	N73-33383*	c 15	US-PATENT-CLASS-29-497.5	N73-33383*	c 15	US-PATENT-CLASS-29-497.5
		US-PATENT-3,754,263			US-PATENT-CLASS-117-138.8R			US-PATENT-CLASS-29-497.5			
		NASA-CASE-ARC-10463-1			US-PATENT-CLASS-117-138.8R			US-PATENT-CLASS-29-497.5			
		US-PATENT-APPL-SN-241615			US-PATENT-CLASS-117-138.8R			US-PATENT-CLASS-29-497.5			
		US-PATENT-CLASS-331-94.5			US-PATENT-CLASS-117-138.8R			US-PATENT-CLASS-29-497.5			
N73-32112*	c 09	US-PATENT-3,753,148	N73-32360*	c 15	US-PATENT-CLASS-117-138.8R	N73-33383*	c 15	US-PATENT-CLASS-29-497.5	N73-33383*	c 15	US-PATENT-CLASS-29-497.5
		NASA-CASE-ARC-10330-1			US-PATENT-CLASS-117-138.8R			US-PATENT-CLASS-29-497.5			
		US-PATENT-APPL-SN-151412			US-PATENT-CLASS-117-138.8R			US-PATENT-CLASS-29-497.5			
		US-PATENT-CLASS-317-235R			US-PATENT-CLASS-117-138.8R			US-PATENT-CLASS-29-497.5			
		US-PATENT-CLASS-317-235WWW			US-PATENT-CLASS-117-138.8R			US-PATENT-CLASS-29-497.5			

N73-33397*	c 16	US-PATENT-3,748,722	N74-11284*	c 35	US-PATENT-CLASS-178-6.6DD	N74-13011*	c 46	US-PATENT-CLASS-317-234R
		NASA-CASE-ARC-10444-1			US-PATENT-CLASS-179-100.2MD			US-PATENT-3,778,685
		US-PATENT-APPL-SN-167719			US-PATENT-CLASS-179-100.2T			NASA-CASE-MS-12408-1
		US-PATENT-CLASS-331-94.5A			US-PATENT-CLASS-340-174.1L			US-PATENT-APPL-SN-229916
		US-PATENT-CLASS-350-285			US-PATENT-3,770,903			US-PATENT-CLASS-423-579
N74-10034*	c 02	US-PATENT-CLASS-356-138	N74-11300*	c 37	NASA-CASE-NPO-11919-1	N74-13129*	c 35	US-PATENT-3,773,913
		US-PATENT-CLASS-356-148			US-PATENT-APPL-SN-237694			NASA-CASE-FRC-10051-1
		US-PATENT-CLASS-356-153			US-PATENT-CLASS-250-343			US-PATENT-APPL-SN-253725
		US-PATENT-CLASS-356-172			US-PATENT-3,766,380			US-PATENT-CLASS-254-93R
		US-PATENT-3,764,220			NASA-CASE-LEW-10533-2			US-PATENT-CLASS-73-88R
N74-10132*	c 32	US-PATENT-APPL-SN-211332	N74-11301*	c 37	US-PATENT-APPL-SN-247055	N74-13130*	c 91	US-PATENT-3,776,028
		US-PATENT-CLASS-244-145			US-PATENT-CLASS-219-101			NASA-CASE-NPO-12127-1
		US-PATENT-3,764,097			US-PATENT-CLASS-219-107			US-PATENT-APPL-SN-106106
		NASA-CASE-NPO-11302-2			US-PATENT-CLASS-219-78			US-PATENT-CLASS-250-219DF
		US-PATENT-APPL-SN-266822			US-PATENT-CLASS-29-497.5			US-PATENT-CLASS-250-83CO
N74-10194*	c 33	US-PATENT-CLASS-315-5.38	N74-11313*	c 36	US-PATENT-3,770,933	N74-13131*	c 39	US-PATENT-3,752,996
		US-PATENT-CLASS-178-69.4R			NASA-CASE-LAR-10170-1			NASA-CASE-MFS-20730-1
		US-PATENT-3,766,315			US-PATENT-APPL-SN-217213			US-PATENT-APPL-SN-182977
		NASA-CASE-NPO-11962-1			US-PATENT-CLASS-117-105.2			US-PATENT-CLASS-269-48.1
		US-PATENT-APPL-SN-292601			US-PATENT-CLASS-29-460			US-PATENT-CLASS-83-452
N74-10195*	c 33	US-PATENT-CLASS-331-1A	N74-12778*	c 52	US-PATENT-CLASS-29-498	N74-13177*	c 31	US-PATENT-CLASS-83-602
		US-PATENT-CLASS-331-14			US-PATENT-CLASS-29-503			US-PATENT-CLASS-83-917
		US-PATENT-CLASS-331-17			US-PATENT-CLASS-29-527.2			US-PATENT-3,777,605
		US-PATENT-CLASS-331-178			US-PATENT-3,769,689			NASA-CASE-LAR-10910-1
		US-PATENT-CLASS-331-18			NASA-CASE-HQN-10790-1			US-PATENT-APPL-SN-239577
N74-10223*	c 33	US-PATENT-CLASS-331-18	N74-12779*	c 54	US-PATENT-APPL-SN-235962	N74-13178*	c 37	US-PATENT-CLASS-73-4R
		US-PATENT-CLASS-331-4			US-PATENT-CLASS-333-83R			US-PATENT-CLASS-73-420
		US-PATENT-3,764,933			US-PATENT-CLASS-333-97R			US-PATENT-3,777,546
		NASA-CASE-LEW-11617-1			US-PATENT-3,771,074			NASA-CASE-LAR-10547-1
		US-PATENT-APPL-SN-266832			NASA-CASE-MFS-20284-1			US-PATENT-APPL-SN-193980
N74-10415*	c 35	US-PATENT-CLASS-315-5.35	N74-12812*	c 27	US-PATENT-APPL-SN-242027	N74-13179*	c 37	US-PATENT-CLASS-264-294
		US-PATENT-CLASS-315-5.38			US-PATENT-CLASS-128-2.05T			US-PATENT-3,772,418
		US-PATENT-3,764,850			US-PATENT-CLASS-128-2.06F			NASA-CASE-LAR-10544-1
		NASA-CASE-LAR-10730-1			US-PATENT-CLASS-324-186			US-PATENT-APPL-SN-188928
		US-PATENT-APPL-SN-239573			US-PATENT-CLASS-324-78D			US-PATENT-CLASS-222-193
N74-10474*	c 37	US-PATENT-CLASS-235-150.3	N74-12813*	c 25	US-PATENT-3,773,038	N74-13205*	c 36	US-PATENT-3,776,432
		US-PATENT-CLASS-235-92CA			NASA-CASE-MFS-21115-1			NASA-CASE-LEW-10805-2
		US-PATENT-CLASS-235-92DM			US-PATENT-APPL-SN-266930			US-PATENT-APPL-SN-233743
		US-PATENT-CLASS-307-225R			US-PATENT-CLASS-222-309			US-PATENT-APPL-SN-29917
		US-PATENT-CLASS-328-48			US-PATENT-CLASS-222-340			US-PATENT-CLASS-29-182
N74-10521*	c 26	US-PATENT-3,764,790	N74-12887*	c 33	US-PATENT-CLASS-222-387	N74-13270*	c 27	US-PATENT-CLASS-29-420.5
		NASA-CASE-MFS-20335-1			US-PATENT-CLASS-222-514			US-PATENT-CLASS-75-200
		US-PATENT-APPL-SN-238263			US-PATENT-3,777,942			US-PATENT-CLASS-75-213
		US-PATENT-CLASS-73-67.8S			NASA-CASE-ARC-10464-1			US-PATENT-CLASS-75-214
		US-PATENT-3,765,229			US-PATENT-APPL-SN-198472			US-PATENT-CLASS-75-226
N74-10597*	c 05	US-PATENT-CLASS-277-25	N74-12888*	c 60	US-PATENT-CLASS-260-2.5AM	N74-13420*	c 04	US-PATENT-3,775,101
		US-PATENT-CLASS-277-27			US-PATENT-3,772,216			NASA-CASE-NPO-11317-2
		US-PATENT-3,767,212			NASA-CASE-LAR-10551-1			US-PATENT-APPL-SN-187143
		NASA-CASE-LEW-10805-3			US-PATENT-APPL-SN-191301			US-PATENT-APPL-SN-34989
		US-PATENT-APPL-SN-266928			US-PATENT-CLASS-128-191R			US-PATENT-CLASS-179-100.2CH
N74-10907*	c 08	US-PATENT-CLASS-277-96	N74-12912*	c 32	US-PATENT-CLASS-23-252R	N74-13436*	c 70	US-PATENT-CLASS-250-205
		US-PATENT-3,767,958			US-PATENT-CLASS-23-281			US-PATENT-CLASS-250-217
		NASA-CASE-XMF-02263			US-PATENT-CLASS-23-288F			US-PATENT-CLASS-340-174.1M
		US-PATENT-APPL-SN-78766			US-PATENT-CLASS-23-288J			US-PATENT-CLASS-340-174YC
		US-PATENT-CLASS-D71-1			US-PATENT-CLASS-423-231			US-PATENT-CLASS-350-151
N74-10942*	c 08	US-PATENT-CLASS-29-420.5	N74-12913*	c 33	US-PATENT-CLASS-55-510	N74-14133*	c 31	US-PATENT-3,778,791
		US-PATENT-CLASS-75-200			US-PATENT-CLASS-55-518			NASA-CASE-LEW-11262-1
		US-PATENT-CLASS-75-226			US-PATENT-3,771,959			US-PATENT-APPL-SN-136008
		US-PATENT-3,765,958			NASA-CASE-ARC-10180-1			US-PATENT-CLASS-204-192
		US-PATENT-APPL-SN-78766			US-PATENT-APPL-SN-136253			US-PATENT-3,772,174
N74-10975*	c 52	US-PATENT-CLASS-D71-1	N74-12914*	c 33	US-PATENT-CLASS-260-2.5L	N74-14133*	c 31	NASA-CASE-FRC-10049-1
		US-PATENT-DES-228,688			US-PATENT-3,772,220			US-PATENT-APPL-SN-232021
		NASA-CASE-MS-12394-1			NASA-CASE-NPO-11905-1			US-PATENT-CLASS-235.150.27
		US-PATENT-APPL-SN-341662			US-PATENT-APPL-SN-290030			US-PATENT-CLASS-235-150.22
		US-PATENT-CLASS-244-83			US-PATENT-CLASS-178-88			US-PATENT-CLASS-235-150.26
N74-11000*	c 32	US-PATENT-CLASS-318-580	N74-12915*	c 33	US-PATENT-CLASS-325-320	N74-14133*	c 31	US-PATENT-CLASS-244-77A
		US-PATENT-CLASS-318-628			US-PATENT-CLASS-329-104			US-PATENT-CLASS-244-77B
		US-PATENT-3,771,037			US-PATENT-CLASS-329-122			US-PATENT-CLASS-343-108R
		NASA-CASE-MS-13972-1			US-PATENT-CLASS-329-126			US-PATENT-3,776,455
		US-PATENT-APPL-SN-200040			US-PATENT-3,772,272			NASA-CASE-LAR-10385-2
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US-PATENT-3,849,877	N75-13111*	c 31	NASA-CASE-LAR-10782-2 US-PATENT-APPL-SN-197689 US-PATENT-APPL-SN-379049 US-PATENT-CLASS-249-144 US-PATENT-CLASS-249-145 US-PATENT-CLASS-249-59 US-PATENT-CLASS-425-DIG.43 US-PATENT-CLASS-425-405R US-PATENT-CLASS-425-438 US-PATENT-CLASS-425-468 US-PATENT-3,850,567	N75-13139*	c 33	NASA-CASE-MFS-22073-1 US-PATENT-APPL-SN-409991 US-PATENT-CLASS-318-608 US-PATENT-CLASS-318-640 US-PATENT-CLASS-318-649 US-PATENT-CLASS-318-675 US-PATENT-3,851,238	N75-13213*	c 35	NASA-CASE-LEW-11632-2 US-PATENT-APPL-SN-254173 US-PATENT-APPL-SN-327969 US-PATENT-CLASS-29-571 US-PATENT-CLASS-29-592 US-PATENT-CLASS-307-309 US-PATENT-CLASS-317-235H US-PATENT-CLASS-330-6 US-PATENT-3,849,875	N75-13261*	c 37	NASA-CASE-LEW-11696-1 US-PATENT-APPL-SN-298156 US-PATENT-CLASS-29-196.6 US-PATENT-CLASS-29-197 US-PATENT-CLASS-29-460 US-PATENT-CLASS-29-494 US-PATENT-CLASS-29-497.5 US-PATENT-CLASS-29-504 US-PATENT-3,849,865	N75-13265*	c 37	NASA-CASE-KSC-10723-1 US-PATENT-APPL-SN-347952 US-PATENT-CLASS-338-162 US-PATENT-CLASS-338-75 US-PATENT-CLASS-338-97 US-PATENT-3,854,113	N75-13266*	c 37	NASA-CASE-NPO-13281-1 US-PATENT-APPL-SN-412079 US-PATENT-CLASS-74-436 US-PATENT-CLASS-74-820 US-PATENT-3,855,873	N75-13502*	c 51	NASA-CASE-LAR-11074-1 US-PATENT-APPL-SN-326384 US-PATENT-CLASS-115-103.5 US-PATENT-CLASS-195-120 US-PATENT-CLASS-195-127 US-PATENT-3,850,754	N75-13531*	c 54	NASA-CASE-LEW-11581-1 US-PATENT-APPL-SN-327921 US-PATENT-CLASS-428-2.05A US-PATENT-CLASS-128-2.05P	N75-13539*	c 60	US-PATENT-3,850,169 NASA-CASE-ARC-10466-1 US-PATENT-APPL-SN-352382 US-PATENT-CLASS-235-156 US-PATENT-CLASS-235-187 US-PATENT-CLASS-324-77B US-PATENT-3,851,162	N75-13625*	c 75	NASA-CASE-MFS-22145-1 US-PATENT-APPL-SN-367606 US-PATENT-CLASS-178-3 US-PATENT-CLASS-313-63 US-PATENT-CLASS-315-111 US-PATENT-CLASS-328-233 US-PATENT-3,854,097	N75-14834*	c 23	NASA-CASE-MSC-13530-2 US-PATENT-APPL-SN-178771 US-PATENT-APPL-SN-69488 US-PATENT-CLASS-108-13 US-PATENT-CLASS-106-15R US-PATENT-CLASS-106-287SB US-PATENT-CLASS-117-124F US-PATENT-CLASS-117-135.5 US-PATENT-CLASS-252-54R US-PATENT-CLASS-252-70 US-PATENT-3,856,534	N75-14844*	c 25	NASA-CASE-NPO-12130-1 US-PATENT-APPL-SN-750235 US-PATENT-CLASS-23-230B US-PATENT-CLASS-23-253R US-PATENT-3,856,471	N75-14957*	c 33	NASA-CASE-MSC-14240-1 US-PATENT-APPL-SN-351929 US-PATENT-CLASS-307-205 US-PATENT-CLASS-307-208 US-PATENT-3,857,045	N75-15014*	c 35	NASA-CASE-LAR-11213-1 US-PATENT-APPL-SN-406715 US-PATENT-CLASS-250-201 US-PATENT-CLASS-356-4 US-PATENT-3,857,031	N75-15028*	c 36	NASA-CASE-MFS-21244-1 US-PATENT-APPL-SN-350249 US-PATENT-CLASS-356-103 US-PATENT-CLASS-356-28 US-PATENT-CLASS-356-5 US-PATENT-3,856,402	N75-15029*	c 36	NASA-CASE-NPO-13050-1 US-PATENT-APPL-SN-317587 US-PATENT-CLASS-117-95 US-PATENT-CLASS-117-97 US-PATENT-CLASS-330-4 US-PATENT-CLASS-332-7.5 US-PATENT-3,859,119	N75-15050*	c 37	NASA-CASE-NPO-13201-1 US-PATENT-APPL-SN-372149 US-PATENT-CLASS-137-505.38 US-PATENT-CLASS-137-505.42 US-PATENT-CLASS-74-424.8VA US-PATENT-3,856,042	N75-15270*	c 52	NASA-CASE-NPO-12119-1 US-PATENT-APPL-SN-847815 US-PATENT-CLASS-424-180 US-PATENT-3,849,554	N75-15662*	c 09	NASA-CASE-LAR-10276-1 US-PATENT-APPL-SN-29979 US-PATENT-CLASS-272-1R US-PATENT-CLASS-272-57A US-PATENT-CLASS-35-12C US-PATENT-3,859,736	N75-15854*	c 32	NASA-CASE-NPO-13292-1 US-PATENT-APPL-SN-416135 US-PATENT-CLASS-343-100ST US-PATENT-CLASS-343-17.5 US-PATENT-CLASS-343-6.5R US-PATENT-CLASS-343-9 US-PATENT-3,860,921	N75-15874*	c 33	NASA-CASE-MFS-22088-1 US-PATENT-APPL-SN-426155 US-PATENT-CLASS-318-227 US-PATENT-CLASS-318-230 US-PATENT-CLASS-318-231 US-PATENT-3,860,858	N75-15931*	c 35	NASA-CASE-MFS-21761-1 US-PATENT-APPL-SN-337816 US-PATENT-CLASS-200-83N US-PATENT-CLASS-73-40 US-PATENT-CLASS-73-49.2 US-PATENT-3,859,845	N75-15932*	c 35	NASA-CASE-MFS-21045-1 US-PATENT-APPL-SN-411572 US-PATENT-CLASS-73-1R US-PATENT-CLASS-73-379 US-PATENT-3,859,840	N75-15992*	c 37	NASA-CASE-GSC-11577-1 US-PATENT-APPL-SN-322997 US-PATENT-CLASS-117-106A	N75-16783*	c 35	NASA-CASE-ARC-10637-1 US-PATENT-APPL-SN-352383 US-PATENT-CLASS-356-28 US-PATENT-3,860,342	N75-18310*	c 20	NASA-CASE-LEW-11694-1 US-PATENT-APPL-SN-352381 US-PATENT-CLASS-29-25.18 US-PATENT-CLASS-72-63 US-PATENT-3,866,797	N75-18477*	c 33	NASA-CASE-MFS-22129-1 US-PATENT-APPL-SN-370255 US-PATENT-CLASS-324-32 US-PATENT-CLASS-324-54 US-PATENT-3,866,114	N75-18479*	c 33	NASA-CASE-MSC-14129-1 US-PATENT-APPL-SN-362146 US-PATENT-CLASS-307-229 US-PATENT-CLASS-307-235R US-PATENT-CLASS-307-267 US-PATENT-CLASS-328-115 US-PATENT-CLASS-328-151 US-PATENT-CLASS-328-58 US-PATENT-3,869,624	N75-18573*	c 37	NASA-CASE-NPO-13253-1 US-PATENT-APPL-SN-395687 US-PATENT-CLASS-248-358R US-PATENT-3,863,881	N75-18574*	c 37	NASA-CASE-GSC-11079-1 US-PATENT-APPL-SN-100637 US-PATENT-CLASS-308-10 US-PATENT-3,865,442	N75-19329*	c 18	NASA-CASE-MFS-22734-1 US-PATENT-APPL-SN-453232 US-PATENT-CLASS-244-162 US-PATENT-3,866,863	N75-19408*	c 26	NASA-CASE-LEW-11696-2 US-PATENT-APPL-SN-298156 US-PATENT-APPL-SN-436315 US-PATENT-CLASS-29-194 US-PATENT-CLASS-29-196.2 US-PATENT-CLASS-29-196.6 US-PATENT-CLASS-29-197 US-PATENT-3,869,779	N75-19515*	c 33	NASA-CASE-MSC-14131-1 US-PATENT-APPL-SN-373588 US-PATENT-CLASS-307-260 US-PATENT-CLASS-324-78J US-PATENT-CLASS-328-59 US-PATENT-CLASS-331-78 US-PATENT-3,866,128	N75-19516*	c 33	NASA-CASE-GSC-11760-1 NASA-CASE-GSC-11783-1 US-PATENT-APPL-SN-395868 US-PATENT-CLASS-343-761 US-PATENT-CLASS-343-781 US-PATENT-CLASS-343-837 US-PATENT-3,866,233	N75-19517*	c 33	NASA-CASE-GSC-11582-1 US-PATENT-APPL-SN-397477 US-PATENT-CLASS-178-15 US-PATENT-CLASS-315-18 US-PATENT-CLASS-340-324AD US-PATENT-3,866,210	N75-19518*	c 33	NASA-CASE-ARC-10348-1 US-PATENT-APPL-SN-140439 US-PATENT-CLASS-330-69 US-PATENT-CLASS-330-86 US-PATENT-3,872,395	N75-19519*	c 33	NASA-CASE-NPO-13125-1 US-PATENT-APPL-SN-319150 US-PATENT-CLASS-235-92DM US-PATENT-CLASS-235-92LG US-PATENT-CLASS-235-92R US-PATENT-CLASS-235-92T US-PATENT-CLASS-235-92VA US-PATENT-3,866,022	N75-19520*	c 33	NASA-CASE-ARC-10364-3 US-PATENT-APPL-SN-209618 US-PATENT-APPL-SN-462844 US-PATENT-CLASS-307-321 US-PATENT-CLASS-324-DIG.1 US-PATENT-CLASS-329-166 US-PATENT-CLASS-329-204 US-PATENT-CLASS-332-47 US-PATENT-3,869,676	N75-19521*	c 33	NASA-CASE-KSC-10736-1 US-PATENT-APPL-SN-348787 US-PATENT-CLASS-324-102 US-PATENT-CLASS-324-113
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N75-19522*	c 33	US-PATENT-3,869,667	N75-20140*	c 77	US-PATENT-CLASS-165-111	N75-25041*	c 33	US-PATENT-CLASS-331-25
		NASA-CASE-GSC-11844-1			US-PATENT-CLASS-62-285			US-PATENT-3,883,817
		US-PATENT-APPL-SN-452761			US-PATENT-CLASS-62-288			NASA-CASE-ARC-10364-2
		US-PATENT-CLASS-307-227			US-PATENT-CLASS-62-289			US-PATENT-APPL-SN-209818
		US-PATENT-CLASS-321-15			US-PATENT-CLASS-62-290			US-PATENT-APPL-SN-433968
N75-19524*	c 33	US-PATENT-CLASS-324-32	N75-21485*	c 32	US-PATENT-CLASS-62-317	N75-25122*	c 35	US-PATENT-CLASS-307-321
		US-PATENT-3,869,659			US-PATENT-CLASS-62-93			US-PATENT-CLASS-324-DIG.1
		NASA-CASE-NPO-13374-1			US-PATENT-3,868,830			US-PATENT-CLASS-329-166
		US-PATENT-APPL-SN-449118			NASA-CASE-GSC-11752-1			US-PATENT-CLASS-329-204
		US-PATENT-CLASS-318-137			US-PATENT-APPL-SN-446569			US-PATENT-3,883,812
N75-19611*	c 35	US-PATENT-CLASS-318-167	N75-21486*	c 32	US-PATENT-CLASS-219-497	N75-25123*	c 35	NASA-CASE-NPO-10764-2
		US-PATENT-CLASS-318-176			US-PATENT-CLASS-219-501			US-PATENT-APPL-SN-273519
		US-PATENT-CLASS-318-183			US-PATENT-CLASS-219-505			US-PATENT-APPL-SN-836280
		US-PATENT-3,867,677			US-PATENT-3,869,597			US-PATENT-CLASS-116-114.5
		NASA-CASE-LAR-11071-1			NASA-CASE-MSC-12607-1			US-PATENT-CLASS-117-72
N75-19612*	c 35	US-PATENT-APPL-SN-334349	N75-21582*	c 35	US-PATENT-APPL-SN-407323	N75-25124*	c 35	US-PATENT-CLASS-73-356
		US-PATENT-CLASS-417-138			US-PATENT-CLASS-178-DIG.12			US-PATENT-3,874,240
		US-PATENT-CLASS-417-36			US-PATENT-CLASS-358-36			NASA-CASE-NPO-13214-1
		US-PATENT-CLASS-417-395			US-PATENT-3,875,584			NASA-CASE-NPO-13215-1
		US-PATENT-CLASS-73-221			NASA-CASE-MSC-14558-1			US-PATENT-APPL-SN-394149
N75-19613*	c 35	US-PATENT-3,864,060	N75-21631*	c 37	US-PATENT-APPL-SN-428994	N75-25185*	c 37	US-PATENT-CLASS-178-DIG.29
		NASA-CASE-LAR-11237-1			US-PATENT-CLASS-178-58A			US-PATENT-CLASS-178-7.2
		US-PATENT-APPL-SN-402868			US-PATENT-CLASS-178-79			US-PATENT-3,883,689
		US-PATENT-CLASS-340-242			US-PATENT-3,875,332			NASA-CASE-MFS-21704-1
		US-PATENT-CLASS-73-46			NASA-CASE-MFS-22671-1			US-PATENT-APPL-SN-386793
N75-19615*	c 35	US-PATENT-CLASS-73-49.2	N75-23910*	c 35	US-PATENT-APPL-SN-419831	N75-25503*	c 51	US-PATENT-CLASS-350-3.5
		US-PATENT-3,864,960			US-PATENT-CLASS-178-69A			US-PATENT-3,883,215
		NASA-CASE-LAR-11207-1			US-PATENT-CLASS-235-181			NASA-CASE-NPO-13360-1
		US-PATENT-APPL-SN-385013			US-PATENT-CLASS-324-57PS			US-PATENT-APPL-SN-401920
		US-PATENT-CLASS-178-DIG.20			US-PATENT-CLASS-324-77H			US-PATENT-CLASS-229-1
N75-19616*	c 35	US-PATENT-CLASS-250-332	N75-24716*	c 05	US-PATENT-CLASS-325-67	N75-25706*	c 74	US-PATENT-CLASS-251-333
		US-PATENT-CLASS-356-186			US-PATENT-3,875,500			US-PATENT-3,874,635
		US-PATENT-CLASS-356-189			NASA-CASE-LEW-11274-1			NASA-CASE-MFS-22649-1
		US-PATENT-CLASS-356-83			US-PATENT-APPL-SN-380630			US-PATENT-APPL-SN-398901
		US-PATENT-CLASS-356-96			US-PATENT-CLASS-277-134			US-PATENT-CLASS-408-112
N75-19618*	c 35	US-PATENT-3,869,212	N75-24736*	c 07	US-PATENT-CLASS-277-27	N75-25730*	c 76	US-PATENT-CLASS-408-186
		NASA-CASE-LAR-11173-1			US-PATENT-CLASS-277-40			US-PATENT-CLASS-408-193
		US-PATENT-APPL-SN-354408			US-PATENT-3,874,677			US-PATENT-CLASS-408-195
		US-PATENT-CLASS-332-2			NASA-CASE-NPO-13327-1			US-PATENT-3,877,833
		US-PATENT-CLASS-73-557			US-PATENT-APPL-SN-429437			NASA-CASE-ARC-10722-1
N75-19615*	c 35	US-PATENT-3,868,856	N75-24758*	c 09	US-PATENT-CLASS-247-171	N75-25914*	c 05	US-PATENT-APPL-SN-428995
		NASA-CASE-MFS-22189-1			US-PATENT-CLASS-250-203			US-PATENT-CLASS-47-1.2
		US-PATENT-APPL-SN-405342			US-PATENT-CLASS-250-203			US-PATENT-CLASS-47-39
		US-PATENT-CLASS-33-148D			US-PATENT-CLASS-250-211R			US-PATENT-CLASS-47-58
		US-PATENT-CLASS-73-143			US-PATENT-3,875,404			US-PATENT-3,882,634
N75-19652*	c 36	US-PATENT-3,864,953	N75-24774*	c 12	NASA-CASE-MSC-14339-1	N75-25915*	c 05	NASA-CASE-HQN-10542-1
		NASA-CASE-MFS-20932-1			US-PATENT-APPL-SN-347953			US-PATENT-APPL-SN-163151
		US-PATENT-APPL-SN-374441			US-PATENT-CLASS-128-2.06E			US-PATENT-CLASS-178-DIG.25
		US-PATENT-CLASS-250-505			US-PATENT-CLASS-128-DIG.4			US-PATENT-CLASS-250-566
		US-PATENT-CLASS-250-508			US-PATENT-CLASS-128-2.06B			US-PATENT-CLASS-350-311
N75-19653*	c 36	US-PATENT-CLASS-250-510	N75-24794*	c 14	US-PATENT-3,882,846	N75-26043*	c 25	US-PATENT-3,883,436
		US-PATENT-3,869,615			NASA-CASE-ARC-10754-1			NASA-CASE-GSC-11425-2
		NASA-CASE-NPO-13131-1			US-PATENT-APPL-SN-398886			US-PATENT-APPL-SN-206266
		US-PATENT-APPL-SN-390468			US-PATENT-CLASS-137-15.1			US-PATENT-APPL-SN-394206
		US-PATENT-CLASS-178-7.1			US-PATENT-CLASS-244-53B			US-PATENT-CLASS-357-23
N75-19654*	c 36	US-PATENT-CLASS-250-211R	N75-24837*	c 20	US-PATENT-3,883,095	N75-26194*	c 32	US-PATENT-CLASS-357-29
		US-PATENT-CLASS-250-578			NASA-CASE-GSC-11127-1			US-PATENT-CLASS-357-42
		US-PATENT-CLASS-315-169R			US-PATENT-APPL-SN-401466			US-PATENT-CLASS-357-52
		US-PATENT-CLASS-340-173LS			US-PATENT-CLASS-318-314			US-PATENT-CLASS-357-54
		US-PATENT-3,865,975			US-PATENT-CLASS-318-318			US-PATENT-CLASS-357-91
N75-19655*	c 36	US-PATENT-CLASS-318-341	N75-24981*	c 32	US-PATENT-3,883,785	N75-26195*	c 32	US-PATENT-3,882,530
		NASA-CASE-HQN-10844-1			NASA-CASE-NPO-13263-1			NASA-CASE-LAR-11252-1
		US-PATENT-APPL-SN-412080			US-PATENT-APPL-SN-393523			US-PATENT-APPL-SN-367268
		US-PATENT-CLASS-356-106LR			US-PATENT-CLASS-73-505			US-PATENT-CLASS-D12-76
		US-PATENT-3,869,210			US-PATENT-3,882,732			US-PATENT-CLASS-244-13
N75-19658*	c 37	NASA-CASE-GSC-11746-1	N75-24982*	c 32	US-PATENT-CLASS-318-341	N75-26195*	c 32	US-PATENT-CLASS-244-15
		US-PATENT-APPL-SN-393528			US-PATENT-3,883,785			US-PATENT-CLASS-244-42DA
		US-PATENT-CLASS-331-94.5M			NASA-CASE-MFS-21488-1			US-PATENT-CLASS-244-55
		US-PATENT-3,869,680			US-PATENT-APPL-SN-359156			US-PATENT-3,884,432
		NASA-CASE-LAR-11341-1			US-PATENT-CLASS-73-143			NASA-CASE-ARC-10519-2
N75-19683*	c 37	US-PATENT-APPL-SN-367293	N75-25040*	c 33	US-PATENT-3,882,719	N75-26195*	c 32	US-PATENT-APPL-SN-452767
		US-PATENT-CLASS-330-4.3			NASA-CASE-NPO-13303-1			US-PATENT-CLASS-280-150SB
		US-PATENT-CLASS-331-94.5P			US-PATENT-APPL-SN-457295			US-PATENT-CLASS-297-385
		US-PATENT-3,868,591			US-PATENT-CLASS-310-10			US-PATENT-CLASS-297-388
		NASA-CASE-MSC-19095-1			US-PATENT-CLASS-310-40			US-PATENT-CLASS-297-389
N75-19684*	c 37	US-PATENT-APPL-SN-415486	N75-24982*	c 32	US-PATENT-CLASS-310-52	N75-26195*	c 32	US-PATENT-CLASS-297-389
		US-PATENT-CLASS-219-137			US-PATENT-CLASS-335-216			US-PATENT-3,887,233
		US-PATENT-3,864,542			US-PATENT-CLASS-60-516			NASA-CASE-LAR-11144-1
		NASA-CASE-NPO-13345-1			US-PATENT-CLASS-60-530			US-PATENT-APPL-SN-426405
		US-PATENT-APPL-SN-482705			US-PATENT-CLASS-62-3			US-PATENT-CLASS-117-106A
N75-19685*	c 37	US-PATENT-CLASS-204-192	N75-24982*	c 32	US-PATENT-CLASS-62-467	N75-26195*	c 32	US-PATENT-CLASS-117-107.2
		US-PATENT-CLASS-204-298			US-PATENT-3,875,435			US-PATENT-CLASS-117-201
		US-PATENT-3,864,239			NASA-CASE-GSC-11743-1			US-PATENT-CLASS-118-48
		NASA-CASE-MFS-21606-1			US-PATENT-APPL-SN-370271			US-PATENT-CLASS-118-49.1
		US-PATENT-APPL-SN-356555			US-PATENT-CLASS-178-66R			US-PATENT-CLASS-148-175
N75-19686*	c 37	US-PATENT-CLASS-292-DIG.14	N75-24982*	c 32	US-PATENT-CLASS-325-30	N75-26194*	c 32	US-PATENT-CLASS-252-62.3GA
		US-PATENT-CLASS-292-108			US-PATENT-CLASS-325-60			US-PATENT-3,888,705
		US-PATENT-CLASS-292-122			US-PATENT-3,878,464			NASA-CASE-NPO-13217-1
		US-PATENT-3,869,160			NASA-CASE-NPO-13140-1			US-PATENT-APPL-SN-382145
		NASA-CASE-MFS-19193-1			US-PATENT-APPL-SN-374422			US-PATENT-CLASS-343-105R
N75-20139*	c 77	US-PATENT-APPL-SN-461477	N75-25040*	c 33	US-PATENT-CLASS-343-100PE	N75-26195*	c 32	US-PATENT-CLASS-343-112D
		US-PATENT-CLASS-285-114			US-PATENT-CLASS-343-5GC			US-PATENT-3,889,264
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N76-31562*	c 39	US-PATENT-CLASS-29-467	US-PATENT-APPL-SN-561764	N77-12240*	c 32	NASA-CASE-NPO-13543-1
		US-PATENT-CLASS-29-526	US-PATENT-CLASS-178-88			NASA-CASE-NPO-13545-1
N76-31562*	c 39	US-PATENT-CLASS-52-236	US-PATENT-CLASS-235-150.1	N77-12240*	c 32	US-PATENT-APPL-SN-589173
		US-PATENT-CLASS-52-637	US-PATENT-CLASS-235-156			US-PATENT-CLASS-325-41
N76-31562*	c 39	US-PATENT-CLASS-52-648	US-PATENT-CLASS-325-323	N77-12240*	c 32	US-PATENT-CLASS-340-146.1AL
		US-PATENT-CLASS-52-651	US-PATENT-CLASS-325-349			US-PATENT-CLASS-340-146.1AQ
N76-31562*	c 39	US-PATENT-CLASS-52-726	US-PATENT-CLASS-325-476	N77-12240*	c 32	US-PATENT-CLASS-340-146.1AV
		US-PATENT-CLASS-52-745	US-PATENT-3,984,634			US-PATENT-3,988,677
N76-31562*	c 39	US-PATENT-CLASS-52-749	NASA-CASE-NPO-13512-1	N77-12402*	c 37	NASA-CASE-MFS-23062-1
		US-PATENT-3,977,147	US-PATENT-APPL-SN-533734			US-PATENT-APPL-SN-591569
N76-31666*	c 44	NASA-CASE-NPO-13087-2	US-PATENT-CLASS-321-19	N77-12402*	c 37	US-PATENT-CLASS-60-527
		US-PATENT-APPL-SN-296622	US-PATENT-CLASS-321-2			US-PATENT-3,987,630
N76-31666*	c 44	US-PATENT-APPL-SN-462341	US-PATENT-CLASS-323-DIG.1	N77-12721*	c 60	NASA-CASE-NPO-13428-1
		US-PATENT-CLASS-136-206	US-PATENT-CLASS-323-17			NASA-CASE-NPO-13447-1
N76-31667*	c 44	US-PATENT-CLASS-136-89	US-PATENT-CLASS-323-22T	N77-12721*	c 60	US-PATENT-APPL-SN-495022
		US-PATENT-3,966,499	US-PATENT-CLASS-323-23			US-PATENT-CLASS-179-15BA
N76-31667*	c 44	NASA-CASE-MFS-23167-1	US-PATENT-3,984,799	N77-12721*	c 60	US-PATENT-CLASS-328-111
		US-PATENT-APPL-SN-602618	NASA-CASE-GSC-11963-1			US-PATENT-CLASS-340-172.5
N76-31667*	c 44	US-PATENT-CLASS-165-10	US-PATENT-APPL-SN-595197	N77-13217*	c 27	US-PATENT-3,988,716
		US-PATENT-CLASS-60-659	US-PATENT-CLASS-244-1A			NASA-CASE-NPO-13666-1
N76-31714*	c 45	US-PATENT-3,977,197	US-PATENT-CLASS-244-42CG	N77-13217*	c 27	US-PATENT-APPL-SN-633877
		NASA-CASE-LAR-11405-1	US-PATENT-CLASS-317-2D			US-PATENT-CLASS-29-182.5

N77-13315*	c 33	US-PATENT-3,990,860 NASA-CASE-NPO-11515-1 US-PATENT-APPL-SN-139596 US-PATENT-CLASS-307-233 US-PATENT-CLASS-307-295 US-PATENT-CLASS-328-133 US-PATENT-3,750,035	N77-14581*	c 44	US-PATENT-3,996,067 NASA-CASE-LEW-12220-1 US-PATENT-APPL-SN-606891 US-PATENT-CLASS-320-2 US-PATENT-CLASS-428-23 US-PATENT-CLASS-429-34 US-PATENT-3,996,064	N77-18154*	c 07	US-PATENT-APPL-SN-565289 US-PATENT-CLASS-235-92CA US-PATENT-CLASS-235-92CT US-PATENT-CLASS-235-92DN US-PATENT-CLASS-235-92R US-PATENT-4,001,552
N77-13418*	c 37	NASA-CASE-ARC-10905-1 US-PATENT-APPL-SN-618594 US-PATENT-CLASS-219-300 US-PATENT-CLASS-219-304 US-PATENT-CLASS-239-171 US-PATENT-CLASS-252-359A US-PATENT-3,990,887	N77-14735*	c 52	NASA-CASE-MFS-23225-1 US-PATENT-APPL-SN-612965 US-PATENT-CLASS-3-1.2 US-PATENT-CLASS-3-14 US-PATENT-3,995,324	N77-18307*	c 32	NASA-CASE-ARC-10761-1 US-PATENT-APPL-SN-612899 US-PATENT-CLASS-137-15.1 US-PATENT-CLASS-244-53B US-PATENT-4,007,891
N77-14025*	c 07	NASA-CASE-LEW-12419-1 US-PATENT-APPL-SN-579375 US-PATENT-CLASS-416-153 US-PATENT-CLASS-416-160 US-PATENT-CLASS-416-162 US-PATENT-CLASS-416-165 US-PATENT-CLASS-416-167 US-PATENT-CLASS-60-226R US-PATENT-3,994,128	N77-14736*	c 52	NASA-CASE-ARC-11007-1 US-PATENT-APPL-SN-652948 US-PATENT-CLASS-128-2H US-PATENT-CLASS-128-379 US-PATENT-CLASS-128-400 US-PATENT-CLASS-128-402 US-PATENT-3,995,621	N77-18382*	c 34	NASA-CASE-LAR-10805-2 US-PATENT-APPL-SN-428992 US-PATENT-APPL-SN-578240 US-PATENT-CLASS-244-117A US-PATENT-CLASS-427-160 US-PATENT-CLASS-427-322 US-PATENT-CLASS-428-35 US-PATENT-CLASS-428-421 US-PATENT-CLASS-428-461 US-PATENT-CLASS-428-474 US-PATENT-4,008,348
N77-14292*	c 32	NASA-CASE-LAR-11607-1 US-PATENT-APPL-SN-617895 US-PATENT-CLASS-325-145 US-PATENT-CLASS-332-22 US-PATENT-CLASS-332-23R US-PATENT-3,996,532	N77-14738*	c 52	NASA-CASE-KSC-10849-1 US-PATENT-APPL-SN-613734 US-PATENT-CLASS-128-418 US-PATENT-CLASS-3-1.1 US-PATENT-CLASS-339-252R US-PATENT-3,995,644	N77-18417*	c 35	NASA-CASE-ARC-10898-1 US-PATENT-APPL-SN-625732 US-PATENT-CLASS-73-12 US-PATENT-CLASS-73-432SD US-PATENT-CLASS-73-71.6 US-PATENT-4,007,623
N77-14333*	c 33	NASA-CASE-GSC-11789-1 US-PATENT-APPL-SN-638982 US-PATENT-CLASS-317-31 US-PATENT-CLASS-321-13 US-PATENT-3,996,506	N77-14751*	c 60	NASA-CASE-GSC-11839-1 US-PATENT-APPL-SN-468614 US-PATENT-CLASS-235-152 US-PATENT-CLASS-250-227 US-PATENT-CLASS-340-172.5 US-PATENT-CLASS-350-96R US-PATENT-3,996,455	N77-18891*	c 73	NASA-CASE-NPO-13121-1 US-PATENT-APPL-SN-294727 US-PATENT-CLASS-310-4R US-PATENT-CLASS-313-311 US-PATENT-CLASS-346R US-PATENT-4,008,407
N77-14334*	c 33	NASA-CASE-GSC-12018-1 US-PATENT-APPL-SN-635531 US-PATENT-CLASS-329-122 US-PATENT-CLASS-329-124 US-PATENT-CLASS-331-23 US-PATENT-CLASS-331-36C US-PATENT-CLASS-332-30V US-PATENT-3,997,848	N77-17029*	c 05	NASA-CASE-ARC-10807-1 US-PATENT-APPL-SN-513612 US-PATENT-CLASS-416-104 US-PATENT-CLASS-416-138 US-PATENT-CLASS-416-141 US-PATENT-3,999,886	N77-18893*	c 74	NASA-CASE-MSC-14683-1 US-PATENT-APPL-SN-612967 US-PATENT-CLASS-358-44 US-PATENT-4,004,292
N77-14335*	c 33	NASA-CASE-MFS-22560-1 US-PATENT-APPL-SN-589233 US-PATENT-CLASS-250-214A US-PATENT-CLASS-330-14 US-PATENT-CLASS-330-28 US-PATENT-CLASS-330-59 US-PATENT-3,996,462	N77-17059*	c 07	NASA-CASE-LEW-12760-1 US-PATENT-APPL-SN-569925 US-PATENT-CLASS-60-226A US-PATENT-CLASS-60-228 US-PATENT-4,005,574	N77-19056*	c 04	NASA-CASE-LAR-11387-2 US-PATENT-APPL-SN-531647 US-PATENT-APPL-SN-623156 US-PATENT-CLASS-33-356 US-PATENT-CLASS-73-178R US-PATENT-4,006,631
N77-14406*	c 35	NASA-CASE-NPO-13663-1 US-PATENT-APPL-SN-634205 US-PATENT-CLASS-250-289 US-PATENT-CLASS-250-298 US-PATENT-3,996,464	N77-17143*	c 20	NASA-CASE-XLA-01349 US-PATENT-APPL-SN-256493 US-PATENT-APPL-SN-54552 US-PATENT-CLASS-102-49.3 US-PATENT-CLASS-264-3R US-PATENT-CLASS-86-1R US-PATENT-CLASS-86-20R US-PATENT-4,000,682	N77-19076*	c 09	NASA-CASE-ARC-10979-1 US-PATENT-APPL-SN-608483 US-PATENT-CLASS-124-6 US-PATENT-CLASS-244-63 US-PATENT-3,989,206
N77-14407*	c 35	NASA-CASE-LAR-11648-1 US-PATENT-APPL-SN-645571 US-PATENT-CLASS-73-133R US-PATENT-3,995,476	N77-17161*	c 23	NASA-CASE-MSC-14428-1 US-PATENT-APPL-SN-450504 US-PATENT-CLASS-23-230B US-PATENT-CLASS-23-230M US-PATENT-CLASS-23-230R US-PATENT-CLASS-23-231 US-PATENT-CLASS-23-232C US-PATENT-CLASS-23-232R US-PATENT-CLASS-23-254R US-PATENT-CLASS-55-197 US-PATENT-CLASS-55-67 US-PATENT-CLASS-55-74 US-PATENT-CLASS-73-23.1 US-PATENT-CLASS-73-61.1C US-PATENT-4,003,257	N77-19170*	c 24	NASA-CASE-LEW-12550-1 US-PATENT-APPL-SN-596905 US-PATENT-CLASS-416-224 US-PATENT-CLASS-416-230 US-PATENT-4,006,999
N77-14408*	c 35	NASA-CASE-ARC-10448-3 US-PATENT-APPL-SN-221670 US-PATENT-APPL-SN-318848 US-PATENT-CLASS-250-396 US-PATENT-3,996,468				N77-19171*	c 24	NASA-CASE-LEW-12619-1 US-PATENT-APPL-SN-462424 US-PATENT-CLASS-204-16 US-PATENT-CLASS-204-40 US-PATENT-CLASS-204-9 US-PATENT-CLASS-29-527.2 US-PATENT-3,989,602
N77-14409*	c 35	NASA-CASE-NPO-13540-1 US-PATENT-APPL-SN-526450 US-PATENT-CLASS-136-232 US-PATENT-CLASS-136-233 US-PATENT-3,996,070				N77-19353*	c 34	NASA-CASE-ARC-10912-1 US-PATENT-APPL-SN-623187 US-PATENT-CLASS-62-100 US-PATENT-CLASS-62-121 US-PATENT-CLASS-62-269 US-PATENT-CLASS-62-315 US-PATENT-4,007,601
N77-14411*	c 35	NASA-CASE-NPO-13683-1 US-PATENT-APPL-SN-599284 US-PATENT-CLASS-250-343 US-PATENT-CLASS-356-201 US-PATENT-CLASS-356-204 US-PATENT-CLASS-356-97 US-PATENT-3,995,960	N77-17351*	c 33	NASA-CASE-MFS-23181-1 US-PATENT-APPL-SN-566495 US-PATENT-CLASS-331-114 US-PATENT-CLASS-331-177V US-PATENT-CLASS-332-18 US-PATENT-CLASS-332-30V US-PATENT-4,003,004	N77-19385*	c 35	NASA-CASE-MSC-14653-1 US-PATENT-APPL-SN-521816 US-PATENT-CLASS-177-1 US-PATENT-CLASS-177-208 US-PATENT-CLASS-73-432R US-PATENT-3,988,933
N77-14477*	c 37	NASA-CASE-FRC-10081-1 US-PATENT-APPL-SN-598504 US-PATENT-CLASS-280-432 US-PATENT-3,995,877	N77-17354*	c 33	NASA-CASE-LEW-11881-1 US-PATENT-APPL-SN-598968 US-PATENT-CLASS-307-229 US-PATENT-CLASS-307-230 US-PATENT-CLASS-328-161 US-PATENT-4,001,602	N77-19416*	c 36	NASA-CASE-XNP-04167-3 US-PATENT-APPL-SN-170544 US-PATENT-APPL-SN-479357 US-PATENT-CLASS-331-94.5D US-PATENT-CLASS-331-94.5G US-PATENT-CLASS-331-94.5PE US-PATENT-4,007,430
N77-14478*	c 37	NASA-CASE-LAR-11658-1 US-PATENT-APPL-SN-625759 US-PATENT-CLASS-83-451 US-PATENT-CLASS-83-467R US-PATENT-3,995,522				N77-19457*	c 37	NASA-CASE-MFS-15218-1 US-PATENT-APPL-SN-387094 US-PATENT-CLASS-197-188 US-PATENT-CLASS-197-190 US-PATENT-3,989,136
N77-14479*	c 37	NASA-CASE-GSC-11960-1 US-PATENT-APPL-SN-629456 US-PATENT-CLASS-242-187 US-PATENT-CLASS-242-193 US-PATENT-CLASS-242-204 US-PATENT-CLASS-242-210 US-PATENT-CLASS-242-57 US-PATENT-3,995,789	N77-17464*	c 37	NASA-CASE-GSC-11978-1 US-PATENT-APPL-SN-593142 US-PATENT-CLASS-308-10 US-PATENT-4,000,929	N77-19458*	c 37	NASA-CASE-GSC-11883-1 NASA-CASE-GSC-11974-1 NASA-CASE-GSC-11975-1 US-PATENT-3,989,136
N77-14580*	c 44	NASA-CASE-LEW-11496-1 US-PATENT-APPL-SN-645508 US-PATENT-CLASS-136-89 US-PATENT-CLASS-204-192	N77-17495*	c 38	NASA-CASE-GSC-11902-1			



			US-PATENT-APPL-SN-596787			US-PATENT-APPL-SN-841278			US-PATENT-CLASS-60-39.28R
			US-PATENT-CLASS-310-4A			US-PATENT-CLASS-313-175			US-PATENT-CLASS-60-39.66
			US-PATENT-CLASS-337-334			US-PATENT-CLASS-313-180			US-PATENT-4,020,632
			US-PATENT-CLASS-340-224			US-PATENT-CLASS-313-184	N77-23482*	c 37	NASA-CASE-LAR-11563-1
			US-PATENT-CLASS-60-527			US-PATENT-CLASS-315-108			US-PATENT-APPL-SN-672815
			US-PATENT-CLASS-75-122.7			US-PATENT-CLASS-315-110			US-PATENT-CLASS-29-DIG.35
			US-PATENT-CLASS-75-170			US-PATENT-3,621,330			US-PATENT-CLASS-29-447
			US-PATENT-4,010,455	N77-21392*	c 35	NASA-CASE-NPO-10711-1			US-PATENT-CLASS-403-273
N77-19571*	c 44		NASA-CASE-LEW-11549-1			US-PATENT-APPL-SN-844315			US-PATENT-CLASS-53-9
			US-PATENT-APPL-SN-510677			US-PATENT-CLASS-179-100.2C			US-PATENT-4,017,959
			US-PATENT-CLASS-136-89			US-PATENT-3,697,705	N77-23483*	c 37	NASA-CASE-MFS-23088-1
			US-PATENT-3,989,541			US-PATENT-3,989,541			US-PATENT-APPL-SN-602617
N77-19760*	c 60		NASA-CASE-ARC-10899-1			US-PATENT-APPL-SN-10619-1			US-PATENT-CLASS-213-81
			US-PATENT-APPL-SN-576774			US-PATENT-APPL-SN-757017			US-PATENT-CLASS-214-1CM
			US-PATENT-CLASS-178-69.5R			US-PATENT-CLASS-338-25			US-PATENT-CLASS-244-161
			US-PATENT-CLASS-178-158S			US-PATENT-3,555,483			US-PATENT-4,018,409
			US-PATENT-CLASS-340-172.5	N77-21844*	c 54	NASA-CASE-MFS-23074-1			NASA-CASE-ARC-10984-1
			US-PATENT-3,990,049			US-PATENT-APPL-SN-623188	N77-24328*	c 32	NASA-CASE-ARC-10984-1
N77-20162*	c 20		NASA-CASE-LEW-12048-1			US-PATENT-CLASS-188-291			US-PATENT-APPL-SN-690815
			US-PATENT-APPL-SN-665033			US-PATENT-CLASS-254-158			US-PATENT-CLASS-358-133
			US-PATENT-CLASS-313-230			US-PATENT-4,018,423			US-PATENT-CLASS-358-138
			US-PATENT-CLASS-313-231.3	N77-21941*	c 74	NASA-CASE-NPO-11429-1			US-PATENT-4,025,950
			US-PATENT-CLASS-313-360			US-PATENT-APPL-SN-95189	N77-24331*	c 32	NASA-CASE-MSC-14840-1
			US-PATENT-CLASS-315-111.3			US-PATENT-CLASS-240-41.35R			US-PATENT-APPL-SN-692414
			US-PATENT-CLASS-315-111.6			US-PATENT-CLASS-240-41R			US-PATENT-CLASS-178-88
			US-PATENT-CLASS-60-202			US-PATENT-CLASS-240-46.13			US-PATENT-CLASS-325-346
			US-PATENT-4,011,719			US-PATENT-CLASS-356-236			US-PATENT-CLASS-329-104
N77-20201*	c 26		NASA-CASE-LEW-12245-1			US-PATENT-3,711,701			US-PATENT-CLASS-329-122
			US-PATENT-APPL-SN-584094	N77-22386*	c 33	NASA-CASE-NPO-10870-1			US-PATENT-4,027,265
			US-PATENT-CLASS-148-12.7N			NASA-CASE-NPO-11191-1	N77-24375*	c 33	NASA-CASE-MSC-12709-1
			US-PATENT-CLASS-148-162			NASA-CASE-NPO-11403-1			US-PATENT-APPL-SN-630583
			US-PATENT-CLASS-148-2			US-PATENT-APPL-SN-108810			US-PATENT-CLASS-307-225R
			US-PATENT-CLASS-148-20.3			US-PATENT-CLASS-313-146			US-PATENT-CLASS-328-38
			US-PATENT-CLASS-148-32.5			US-PATENT-CLASS-313-182			US-PATENT-CLASS-328-39
			US-PATENT-CLASS-75-170			US-PATENT-CLASS-313-60			US-PATENT-CLASS-328-4-8
			US-PATENT-4,012,237			US-PATENT-3,738,453			US-PATENT-CLASS-328-63
N77-20289*	c 32		NASA-CASE-NPO-13753-1	N77-22449*	c 35	NASA-CASE-LAR-11825-1			US-PATENT-4,025,866
			US-PATENT-APPL-SN-658449			US-PATENT-APPL-SN-632112	N77-24423*	c 34	NASA-CASE-LAR-12045-1
			US-PATENT-CLASS-325-4			US-PATENT-CLASS-73-88R			US-PATENT-APPL-SN-682416
			US-PATENT-CLASS-343-100ST			US-PATENT-4,018,085			US-PATENT-CLASS-259/4R
			US-PATENT-CLASS-343-6.8R	N77-22450*	c 35	NASA-CASE-MFS-23281-1			US-PATENT-CLASS-261-DIG.75
			US-PATENT-CLASS-343-6.5R			US-PATENT-APPL-SN-657995			US-PATENT-CLASS-261-123
			US-PATENT-4,012,696			US-PATENT-CLASS-73-15.6			US-PATENT-4,026,527
N77-20399*	c 35		NASA-CASE-ARC-10716-1			US-PATENT-CLASS-73-95	N77-24454*	c 35	NASA-CASE-ARC-10900-1
			US-PATENT-APPL-SN-403695			US-PATENT-4,018,080			US-PATENT-APPL-SN-630579
			US-PATENT-CLASS-235-150.2	N77-22479*	c 37	NASA-CASE-NPO-10316-1			US-PATENT-CLASS-338-229
			US-PATENT-CLASS-235-150.25			US-PATENT-APPL-SN-703107			US-PATENT-CLASS-338-28
			US-PATENT-CLASS-244-165			US-PATENT-CLASS-60-53			US-PATENT-4,025,891
			US-PATENT-CLASS-244-171			US-PATENT-3,478,514	N77-24455*	c 35	NASA-CASE-GSC-12077-1
			US-PATENT-CLASS-244-3.21			NASA-CASE-NPO-13058-1			US-PATENT-APPL-SN-635519
			US-PATENT-4,012,018	N77-22480*	c 37	NASA-CASE-NPO-13096-1			US-PATENT-CLASS-65-108
N77-20400*	c 35		NASA-CASE-ARC-10911-1			US-PATENT-APPL-SN-4003154			US-PATENT-CLASS-65-58A
			US-PATENT-CLASS-338-28			US-PATENT-CLASS-214-16.1CB			US-PATENT-CLASS-6554
			US-PATENT-CLASS-73-204			US-PATENT-3,896,955			US-PATENT-CLASS-6564
			US-PATENT-4,011,756	N77-22482*	c 37	NASA-CASE-MSC-19536-1	N77-25499*	c 36	NASA-CASE-GSC-11571-1
N77-20401*	c 35		NASA-CASE-MFS-23267-1			US-PATENT-APPL-SN-658450			US-PATENT-APPL-SN-646704
			US-PATENT-APPL-SN-653422			US-PATENT-CLASS-74-96			US-PATENT-CLASS-331-84.5S
			US-PATENT-CLASS-126-270			US-PATENT-4,018,092			US-PATENT-4,025,875
			US-PATENT-CLASS-126-271	N77-22606*	c 44	NASA-CASE-LEW-12364-1	N77-25501*	c 36	NASA-CASE-ARC-10970-1
			US-PATENT-CLASS-250-203R			US-PATENT-APPL-SN-707124			US-PATENT-APPL-SN-691046
			US-PATENT-4,011,854			US-PATENT-CLASS-253-317			US-PATENT-CLASS-250-574
N77-20882*	c 74		NASA-CASE-LAR-11782-1			US-PATENT-CLASS-429-105			US-PATENT-CLASS-350-100
			US-PATENT-APPL-SN-608482			US-PATENT-CLASS-429-107			US-PATENT-CLASS-350-102
			US-PATENT-CLASS-350-145			US-PATENT-CLASS-429-190			US-PATENT-CLASS-356-28
			US-PATENT-CLASS-350-174	N77-22607*	c 44	US-PATENT-4,018,971			US-PATENT-4,026,655
			US-PATENT-4,012,123			NASA-CASE-LAR-11361-1	N77-25502*	c 36	NASA-CASE-NPO-13147-1
N77-21267*	c 32		NASA-CASE-LAR-11390-1			US-PATENT-APPL-SN-669928			US-PATENT-APPL-SN-317310
			US-PATENT-APPL-SN-662176			US-PATENT-CLASS-23-277R			US-PATENT-CLASS-330-4.3
			US-PATENT-CLASS-340-5H			US-PATENT-CLASS-23-281			US-PATENT-CLASS-331-84.5D
			US-PATENT-CLASS-343-18B			US-PATENT-CLASS-423-648R			US-PATENT-CLASS-331-84.5P
			US-PATENT-CLASS-343-5CM			US-PATENT-CLASS-55-158			US-PATENT-4,027,273
			US-PATENT-CLASS-343-5MM	N77-22794*	c 51	US-PATENT-4,018,868	N77-25769*	c 51	NASA-CASE-LAR-10773-3
			US-PATENT-4,019,179			NASA-CASE-GSC-12039-1			US-PATENT-APPL-SN-125235
N77-21314*	c 33		NASA-CASE-NPO-10189-1			US-PATENT-APPL-SN-572991			US-PATENT-APPL-SN-314656
			NASA-CASE-NPO-10781-1			US-PATENT-CLASS-195-103.5K			US-PATENT-APPL-SN-623238
			US-PATENT-APPL-SN-744522			US-PATENT-CLASS-195-103.5R			US-PATENT-CLASS-195-1.8
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US-PATENT-CLASS-136-89SJ US-PATENT-4,153,476	N79-26075*	c 12	NASA-CASE-MFS-23460-1 US-PATENT-APPL-SN-746578 US-PATENT-CLASS-13-20 US-PATENT-CLASS-13-22 US-PATENT-CLASS-13-24 US-PATENT-CLASS-219-410 US-PATENT-4,158,742	N79-26100*	c 15	NASA-CASE-ARC-11104-1 US-PATENT-APPL-SN-854920 US-PATENT-CLASS-244-121 US-PATENT-CLASS-260-37EP US-PATENT-CLASS-260-830S US-PATENT-CLASS-264-102 US-PATENT-CLASS-264-145 US-PATENT-CLASS-264-151 US-PATENT-CLASS-264-175 US-PATENT-CLASS-264-236 US-PATENT-CLASS-428-220 US-PATENT-CLASS-428-413 US-PATENT-CLASS-428-414 US-PATENT-CLASS-428-418 US-PATENT-CLASS-428-421 US-PATENT-CLASS-428-820 US-PATENT-4,156,752	N79-26372*	c 35	NASA-CASE-LAR-11889-1 US-PATENT-APPL-SN-662182 US-PATENT-CLASS-308-10 US-PATENT-CLASS-73-17BR US-PATENT-4,156,548	N79-26439*	c 43	NASA-CASE-MFS-23726-1 US-PATENT-APPL-SN-848418 US-PATENT-CLASS-105-161 US-PATENT-CLASS-299-1 US-PATENT-CLASS-33-1N US-PATENT-CLASS-33-1Q US-PATENT-CLASS-33-17AL US-PATENT-CLASS-364-560 US-PATENT-4,156,971	N79-26474*	c 44	NASA-CASE-LEW-13150-1 US-PATENT-APPL-SN-914260 US-PATENT-CLASS-429-101 US-PATENT-CLASS-429-15 US-PATENT-4,159,366	N79-26475*	c 44	NASA-CASE-MFS-23540-1 US-PATENT-APPL-SN-863773 US-PATENT-CLASS-29-572 US-PATENT-CLASS-29-577 US-PATENT-CLASS-29-578 US-PATENT-CLASS-29-580 US-PATENT-CLASS-357-45 US-PATENT-4,156,309	N79-26771*	c 52	NASA-CASE-ARC-10994-2 US-PATENT-APPL-SN-759965 US-PATENT-CLASS-128-660 US-PATENT-CLASS-73-626 US-PATENT-4,154,230	N79-26772*	c 52	NASA-CASE-KSC-11069-1 US-PATENT-APPL-SN-876438 US-PATENT-CLASS-3-1.9 US-PATENT-CLASS-3-12 US-PATENT-CLASS-3-2 US-PATENT-4,158,895	N79-27836*	c 52	NASA-CASE-NPO-13910-1 US-PATENT-APPL-SN-712270 US-PATENT-CLASS-128-329R US-PATENT-CLASS-128-639 US-PATENT-4,154,228	N79-28253*	c 25	NASA-CASE-NPO-13650-1 US-PATENT-APPL-SN-704468 US-PATENT-CLASS-118-49 US-PATENT-CLASS-23-252R US-PATENT-CLASS-248 US-PATENT-CLASS-253 US-PATENT-CLASS-337 US-PATENT-CLASS-349 US-PATENT-CLASS-423-33.5 US-PATENT-CLASS-427-95 US-PATENT-4,033,286	N79-28307*	c 27	NASA-CASE-LEW-12053-2 US-PATENT-APPL-SN-796263 US-PATENT-CLASS-260-37N US-PATENT-CLASS-260-42 US-PATENT-CLASS-260-53 US-PATENT-CLASS-528-126 US-PATENT-CLASS-528-127 US-PATENT-CLASS-528-128 US-PATENT-CLASS-528-221 US-PATENT-CLASS-528-223
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				US-PATENT-CLASS-528-225	N79-33316*	c 27	NASA-CASE-LAR-12054-1	N80-10799*	c 54	NASA-CASE-MSC-16182-1
				US-PATENT-CLASS-528-227			US-PATENT-APPL-SN-839963			US-PATENT-APPL-SN-780938
				US-PATENT-CLASS-528-229			US-PATENT-CLASS-264-137			US-PATENT-CLASS-128-142R
				US-PATENT-CLASS-528-331			US-PATENT-CLASS-428-474			US-PATENT-CLASS-128-191R
				US-PATENT-CLASS-528-336			US-PATENT-CLASS-528-229			US-PATENT-CLASS-128-212
				US-PATENT-CLASS-528-337			US-PATENT-4,166,170			US-PATENT-4,168,706
				US-PATENT-CLASS-528-338	N79-33392*	c 33	NASA-CASE-XMF-04494-1	N80-14107*	c 05	NASA-CASE-ARC-11106-1
				US-PATENT-CLASS-528-342			US-PATENT-APPL-SN-547643			US-PATENT-APPL-SN-831633
				US-PATENT-CLASS-544-193			US-PATENT-CLASS-200-83			US-PATENT-CLASS-415-199
				US-PATENT-4,159,262			US-PATENT-3,378,657			US-PATENT-CLASS-416-228
N79-28342*	c 28			NASA-CASE-NPO-14260-1	N79-33393*	c 33	NASA-CASE-XMS-01244-1	N80-14183*	c 18	NASA-CASE-GSC-12331-1
				US-PATENT-APPL-SN-861390			US-PATENT-APPL-SN-20370			US-PATENT-APPL-SN-943088
				US-PATENT-CLASS-149-19.4			US-PATENT-CLASS-200-114			US-PATENT-CLASS-343-880
				US-PATENT-CLASS-149-19.9			US-PATENT-3,123,692			US-PATENT-CLASS-343-883
				US-PATENT-CLASS-149-20	N79-33449*	c 35	NASA-CASE-XGS-01245-1			US-PATENT-4,176,360
				US-PATENT-4,158,583			US-PATENT-APPL-SN-134619	N80-14188*	c 20	NASA-CASE-XLE-02062-1
N79-28370*	c 31			NASA-CASE-MFS-23721-1			US-PATENT-CLASS-338-18			US-PATENT-APPL-SN-545793
				US-PATENT-APPL-SN-847277			US-PATENT-3,119,086			US-PATENT-CLASS-60-203
				US-PATENT-CLASS-343-14	N79-33450*	c 35	NASA-CASE-XGS-01293-1			US-PATENT-CLASS-60-259
				US-PATENT-CLASS-343-5NA			US-PATENT-APPL-SN-150690			US-PATENT-4,171,615
				US-PATENT-4,161,731			US-PATENT-CLASS-73-400	N80-14229*	c 26	NASA-CASE-NPO-14474-1
N79-28415*	c 33			NASA-CASE-MSC-16697-1			US-PATENT-3,190,124			US-PATENT-APPL-SN-918537
				US-PATENT-APPL-SN-885067	N79-33467*	c 37	NASA-CASE-XMS-01077-1			US-PATENT-CLASS-423-148
				US-PATENT-CLASS-307-119			US-PATENT-APPL-SN-228049			US-PATENT-CLASS-423-293
				US-PATENT-CLASS-307-98			US-PATENT-CLASS-312-319			US-PATENT-CLASS-423-348
				US-PATENT-CLASS-361-170			US-PATENT-3,123,418			US-PATENT-CLASS-423-417
N79-28416*	c 33			NASA-CASE-GSC-12171-1	N79-33468*	c 37	NASA-CASE-HQN-00573-1			US-PATENT-CLASS-423-625
				US-PATENT-APPL-SN-878542			US-PATENT-APPL-SN-129379	N80-14281*	c 32	NASA-CASE-NPO-13830-1
				US-PATENT-CLASS-343-909			US-PATENT-CLASS-137-14			US-PATENT-APPL-SN-703905
				US-PATENT-4,160,254			US-PATENT-3,134,389			US-PATENT-APPL-SN-834257
N79-28527*	c 35			NASA-CASE-NPO-13953-1	N79-33469*	c 37	NASA-CASE-XGS-01286-1			US-PATENT-CLASS-333-81R
				US-PATENT-APPL-SN-880727			US-PATENT-APPL-SN-142583			US-PATENT-CLASS-343-18A
				US-PATENT-CLASS-356-237			US-PATENT-CLASS-251-172			US-PATENT-CLASS-343-909
				US-PATENT-CLASS-356-404			US-PATENT-3,233,862	N80-14330*	c 33	NASA-CASE-NPO-10857-1
				US-PATENT-4,160,601	N79-34011*	c 74	NASA-CASE-NPO-14066-1			US-PATENT-APPL-SN-888832
N79-28549*	c 37			NASA-CASE-GSC-12297-1			US-PATENT-APPL-SN-827464			US-PATENT-CLASS-315-145
				US-PATENT-APPL-SN-880838			US-PATENT-CLASS-250-216			US-PATENT-CLASS-315-260
				US-PATENT-CLASS-165-105			US-PATENT-CLASS-250-551			US-PATENT-CLASS-315-334
				US-PATENT-CLASS-357-74	N80-10278*	c 20	NASA-CASE-MFS-23642-1			US-PATENT-3,635,537
				US-PATENT-CLASS-357-79			US-PATENT-APPL-SN-923758	N80-14332*	c 33	NASA-CASE-NPO-14350-1
				US-PATENT-CLASS-357-81			US-PATENT-CLASS-137-177			US-PATENT-APPL-SN-921627
				US-PATENT-CLASS-357-82			US-PATENT-CLASS-137-209			US-PATENT-CLASS-250-310
				US-PATENT-CLASS-357-83			US-PATENT-CLASS-137-574			US-PATENT-CLASS-250-492A
				US-PATENT-4,161,747			US-PATENT-CLASS-137-576			US-PATENT-CLASS-324-158T
N79-28550*	c 37			NASA-CASE-GSC-12274-1			US-PATENT-CLASS-137-590	N80-14371*	c 35	NASA-CASE-LAR-11690-1
				US-PATENT-APPL-SN-909100			US-PATENT-CLASS-244-135R			US-PATENT-APPL-SN-928129
				US-PATENT-CLASS-251-7			US-PATENT-4,168,718			US-PATENT-CLASS-73-655
				US-PATENT-CLASS-72-436	N80-10358*	c 27	NASA-CASE-MSC-14903-2			US-PATENT-CLASS-73-661
				US-PATENT-CLASS-72-451			US-PATENT-APPL-SN-706424			US-PATENT-4,171,645
				US-PATENT-CLASS-72-470			US-PATENT-APPL-SN-907435	N80-14384*	c 36	NASA-CASE-GSC-12237-1
				US-PATENT-4,159,634			US-PATENT-CLASS-260-926			US-PATENT-APPL-SN-837795
N79-28551*	c 37			NASA-CASE-ARC-11052-1			US-PATENT-4,092,466			US-PATENT-CLASS-331-94.5C
				US-PATENT-APPL-SN-826202			US-PATENT-4,168,287			US-PATENT-CLASS-331-94.5P
				US-PATENT-CLASS-414-4	N80-10374*	c 28	NASA-CASE-NPO-13849-1			US-PATENT-4,173,001
				US-PATENT-4,160,508			NASA-CASE-NPO-13907-1	N80-14395*	c 37	NASA-CASE-XNP-08835-1
N79-31228*	c 09			NASA-CASE-LAR-12149-2			US-PATENT-APPL-SN-668783			US-PATENT-APPL-SN-534931
				US-PATENT-APPL-SN-829314			US-PATENT-CLASS-123-DIG.12			US-PATENT-CLASS-204-224
				US-PATENT-APPL-SN-928131			US-PATENT-CLASS-123-179R			US-PATENT-3,352,774
				US-PATENT-CLASS-35-12E			US-PATENT-CLASS-123-3	N80-14397*	c 37	NASA-CASE-MFS-23284-1
				US-PATENT-CLASS-35-12H			US-PATENT-CLASS-23-288R			US-PATENT-APPL-SN-753103
				US-PATENT-4,164,079			US-PATENT-CLASS-423-650			US-PATENT-CLASS-204-180G
N79-31347*	c 24			NASA-CASE-GSC-12303-1			US-PATENT-CLASS-48-DIG.8			US-PATENT-CLASS-204-299R
				US-PATENT-APPL-SN-862880			US-PATENT-CLASS-48-10-3	N80-14398*	c 37	NASA-CASE-GSC-12322-1
				US-PATENT-CLASS-106-74			US-PATENT-CLASS-48-102A			US-PATENT-APPL-SN-907436
				US-PATENT-CLASS-106-84			US-PATENT-CLASS-48-107			US-PATENT-CLASS-244-161
				US-PATENT-4,162,169			US-PATENT-CLASS-48-117			US-PATENT-CLASS-269-156
N79-31523*	c 34			NASA-CASE-GSC-12253-1			US-PATENT-CLASS-48-61			US-PATENT-CLASS-294-113
				US-PATENT-APPL-SN-853677			US-PATENT-CLASS-60-300			US-PATENT-CLASS-294-86R
				US-PATENT-CLASS-165-105			US-PATENT-CLASS-60-606			US-PATENT-CLASS-414-1
				US-PATENT-CLASS-165-32			US-PATENT-4,033,133	N80-14423*	c 43	NASA-CASE-MFS-23720-2
				US-PATENT-CLASS-244-1R			US-PATENT-4,033,133			US-PATENT-APPL-SN-848421
				US-PATENT-CLASS-244-163	N80-10494*	c 37	NASA-CASE-NPO-14384-1			US-PATENT-CLASS-73-12
				US-PATENT-4,162,701			US-PATENT-APPL-SN-880728			US-PATENT-CLASS-73-82
N79-31706*	c 43			NASA-CASE-MFS-23725-1			US-PATENT-CLASS-210-186			US-PATENT-4,157,655
				US-PATENT-APPL-SN-848793			US-PATENT-CLASS-210-340	N80-14472*	c 44	NASA-CASE-LEW-12568-1
				US-PATENT-CLASS-250-253			US-PATENT-CLASS-239-102			US-PATENT-APPL-SN-916655
				US-PATENT-CLASS-250-272			US-PATENT-CLASS-422-187			US-PATENT-CLASS-307-63
				US-PATENT-4,165,460			US-PATENT-CLASS-422-199			US-PATENT-CLASS-307-66
N79-31752*	c 44			NASA-CASE-NPO-14205-1			US-PATENT-CLASS-422-208			US-PATENT-CLASS-323-15
				US-PATENT-APPL-SN-920879			US-PATENT-CLASS-422-235			US-PATENT-CLASS-323-19
				US-PATENT-CLASS-106-1			US-PATENT-CLASS-422-242			US-PATENT-4,175,249
				US-PATENT-CLASS-106-1.2			US-PATENT-CLASS-423-350	N80-14473*	c 44	NASA-CASE-MFS-23727-1
				US-PATENT-CLASS-136-890C			US-PATENT-4,169,129			US-PATENT-APPL-SN-856465
				US-PATENT-CLASS-252-514	N80-10507*	c 39	NASA-CASE-NPO-14192-1			US-PATENT-CLASS-126-438
				US-PATENT-CLASS-29-572			US-PATENT-APPL-SN-830562			US-PATENT-CLASS-126-442
				US-PATENT-CLASS-29-589			US-PATENT-CLASS-181-102			US-PATENT-CLASS-350-295
				US-PATENT-CLASS-357-30			US-PATENT-CLASS-181-105			US-PATENT-CLASS-350-296
				US-PATENT-CLASS-357-65			US-PATENT-CLASS-367-26			US-PATENT-4,173,397
				US-PATENT-CLASS-357-67			US-PATENT-CLASS-467-28	N80-14474*	c 44	NASA-CASE-NPO-13652-3
				US-PATENT-CLASS-427-88			US-PATENT-4,168,483			
				US-PATENT-4,163,678	N80-10709*	c 46	NASA-CASE-NPO-14231-1			
N79-31753*	c 44			NASA-CASE-NPO-14467-1			US-PATENT-APPL-SN-903019			
				US-PATENT-APPL-SN-946994			US-PATENT-CLASS-175-78			
				US-PATENT-CLASS-136-89PC			US-PATENT-CLASS-73-155			
				US-PATENT-4,162,928			US-PATENT-4,167,111			



				US-PATENT-APPL-SN-609890				US-PATENT-CLASS-73-188				US-PATENT-CLASS-156-278
				US-PATENT-APPL-SN-691358				US-PATENT-CLASS-73-189				US-PATENT-CLASS-156-285
				US-PATENT-CLASS-136-89P				US-PATENT-CLASS-73-212				US-PATENT-CLASS-156-303
				US-PATENT-CLASS-29-572				US-PATENT-4,184,149				US-PATENT-CLASS-156-312
				US-PATENT-CLASS-29-588		N80-18039*	c 07	NASA-CASE-LEW-12971-1		N80-18551*	c 44	US-PATENT-4,184,903
				US-PATENT-CLASS-29-627				US-PATENT-APPL-SN-858936				NASA-CASE-NPO-14096-1
				US-PATENT-4,133,697				US-PATENT-CLASS-60-240				US-PATENT-APPL-SN-928128
				US-PATENT-4,173,820				US-PATENT-CLASS-60-39.03				US-PATENT-CLASS-324-158D
N80-14579*	c 45			NASA-CASE-NPO-14340-1				US-PATENT-CLASS-60-39.27				US-PATENT-CLASS-324-404
				US-PATENT-APPL-SN-946992				US-PATENT-4,184,327				US-PATENT-4,184,111
				US-PATENT-CLASS-210-57		N80-18087*	c 20	NASA-CASE-MS-18179-1		N80-18552*	c 44	NASA-CASE-LAR-11999-1
				US-PATENT-CLASS-210-63Z				US-PATENT-APPL-SN-931218				US-PATENT-APPL-SN-876299
				US-PATENT-CLASS-422-9				US-PATENT-CLASS-60-63Z				US-PATENT-CLASS-250-211K
				US-PATENT-4,172,786				US-PATENT-4,183,217				US-PATENT-CLASS-250-231SE
N80-14603*	c 46			NASA-CASE-NPO-14124-1		N80-18231*	c 31	NASA-CASE-NPO-14382-1		N80-18667*	c 48	US-PATENT-4,184,072
				US-PATENT-APPL-SN-863024				US-PATENT-APPL-SN-891373				NASA-CASE-MFS-23862-1
				US-PATENT-CLASS-343-100ME				US-PATENT-CLASS-261-118				US-PATENT-APPL-SN-951423
				US-PATENT-CLASS-343-112D				US-PATENT-CLASS-422-224				US-PATENT-CLASS-73-170A
				US-PATENT-4,170,776				US-PATENT-CLASS-423-350				US-PATENT-4,184,368
N80-14684*	c 52			NASA-CASE-LEW-12955-1				US-PATENT-4,186,368		N80-18690*	c 52	NASA-CASE-LEW-12723-1
				US-PATENT-APPL-SN-829318		N80-18252*	c 32	NASA-CASE-NPO-14152-1				US-PATENT-APPL-SN-829317
				US-PATENT-CLASS-128-276				US-PATENT-APPL-SN-899828				US-PATENT-CLASS-128-276
				US-PATENT-4,157,718				US-PATENT-CLASS-178-58R				US-PATENT-CLASS-128-760
N80-14687*	c 52			NASA-CASE-NPO-14101-1				US-PATENT-CLASS-179-15BA				US-PATENT-4,184,491
				US-PATENT-APPL-SN-772434				US-PATENT-4,187,394		N80-18691*	c 52	NASA-CASE-ARC-11120-1
				US-PATENT-CLASS-210-22		N80-18253*	c 32	NASA-CASE-NPO-14328-1				US-PATENT-APPL-SN-786256
				US-PATENT-CLASS-210-321B				NASA-CASE-NPO-14579-1				US-PATENT-CLASS-128-748
				US-PATENT-4,094,775				NASA-CASE-NPO-14590-1				US-PATENT-CLASS-128-903
N80-14877*	c 72			NASA-CASE-NPO-14078-1				US-PATENT-APPL-SN-956160				US-PATENT-CLASS-73-724
				US-PATENT-APPL-SN-856466				US-PATENT-CLASS-325-305				US-PATENT-4,186,749
				US-PATENT-CLASS-250-281				US-PATENT-CLASS-325-307		N80-18951*	c 76	NASA-CASE-GSC-12291-1
				US-PATENT-CLASS-250-282				US-PATENT-CLASS-325-419				US-PATENT-APPL-SN-906298
				US-PATENT-CLASS-250-423P				US-PATENT-4,186,347				US-PATENT-CLASS-125-23R
				US-PATENT-4,158,775		N80-18285*	c 33	NASA-CASE-NPO-14229-1				US-PATENT-CLASS-269-21
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				US-PATENT-APPL-SN-883961				US-PATENT-APPL-SN-949886				US-PATENT-CLASS-83-152
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		US-PATENT-CLASS-244-182				US-PATENT-CLASS-528-228			US-PATENT-CLASS-260-17.4UC
		US-PATENT-4,266,743				US-PATENT-4,276,344			US-PATENT-CLASS-264-104
N81-26161*	c 14	.....				US-PATENT-4,276,344			US-PATENT-CLASS-428-139
		NASA-CASE-LAR-12250-1	N81-27323*	c 31	.....	NASA-CASE-MSC-16217-1			US-PATENT-CLASS-428-249
		US-PATENT-APPL-SN-910794				US-PATENT-APPL-SN-893383			US-PATENT-CLASS-428-253
		US-PATENT-CLASS-244-160				US-PATENT-CLASS-52-108			US-PATENT-CLASS-429-27
		US-PATENT-CLASS-244-2				US-PATENT-CLASS-52-745			US-PATENT-CLASS-429-28
		US-PATENT-CLASS-244-63				US-PATENT-4,237,662			US-PATENT-CLASS-525-56
		US-PATENT-4,265,416				NASA-CASE-LAR-12195-1			US-PATENT-CLASS-525-61
N81-26179*	c 24	.....	N81-27324*	c 31	.....	US-PATENT-APPL-SN-946991			US-PATENT-4,272,470
		NASA-CASE-LEW-12493-2				US-PATENT-CLASS-182-62.5	N81-29163*	c 24	.....
		US-PATENT-APPL-SN-122967				US-PATENT-CLASS-212-267			NASA-CASE-MFS-23674-1
		US-PATENT-APPL-SN-989387				US-PATENT-CLASS-52-111			US-PATENT-APPL-SN-912276
		US-PATENT-CLASS-228-118				US-PATENT-CLASS-52-632			US-PATENT-CLASS-156-161
		US-PATENT-CLASS-228-190				US-PATENT-4,238,911			US-PATENT-CLASS-156-165
		US-PATENT-4,211,354				NASA-CASE-GSC-12147-1			US-PATENT-CLASS-156-285
N81-26358*	c 33	.....	N81-27341*	c 32	.....	US-PATENT-APPL-SN-780873			US-PATENT-CLASS-156-284
		NASA-CASE-LAR-12196-1				US-PATENT-CLASS-343-112R			US-PATENT-CLASS-156-74
		US-PATENT-APPL-SN-017887				US-PATENT-4,276,553			US-PATENT-CLASS-264-229
		US-PATENT-CLASS-343-100PE				US-PATENT-4,276,553			US-PATENT-CLASS-264-231
		US-PATENT-4,264,908	N81-27395*	c 33	.....	NASA-CASE-MFS-23988-1			US-PATENT-CLASS-264-258
N81-26359*	c 33	.....				US-PATENT-APPL-SN-044431			US-PATENT-CLASS-264-259
		NASA-CASE-KSC-11085-1				US-PATENT-CLASS-307-252UA			US-PATENT-CLASS-264-311
		US-PATENT-APPL-SN-051271				US-PATENT-CLASS-318-799			US-PATENT-CLASS-74-572
		US-PATENT-CLASS-324-51				US-PATENT-CLASS-318-810			US-PATENT-4,190,626
		US-PATENT-CLASS-324-73AT				US-PATENT-4,266,177	N81-29229*	c 27	.....
		US-PATENT-CLASS-371-20				NASA-CASE-NPO-14426-1			NASA-CASE-LAR-12642-1
		US-PATENT-CLASS-371-25				US-PATENT-APPL-SN-009889			US-PATENT-APPL-SN-092141
N81-26360*	c 33	.....	N81-27396*	c 33	.....	US-PATENT-CLASS-307-352			US-PATENT-CLASS-264-137
		NASA-CASE-GSC-12515-1				US-PATENT-CLASS-307-353			US-PATENT-CLASS-428-473.5
		US-PATENT-APPL-SN-172727				US-PATENT-CLASS-328-151			US-PATENT-CLASS-528-222
		US-PATENT-CLASS-148-1.5				US-PATENT-4,262,258			US-PATENT-4,281,102
		US-PATENT-CLASS-148-187	N81-27397*	c 33	.....	NASA-CASE-MSC-12745-1	N81-29308*	c 32	.....
		US-PATENT-CLASS-156-647				US-PATENT-APPL-SN-746579			NASA-CASE-NPO-14641-1
		US-PATENT-CLASS-156-648				US-PATENT-CLASS-179-78			US-PATENT-APPL-SN-076643
		US-PATENT-CLASS-156-649				US-PATENT-CLASS-333-12			US-PATENT-CLASS-343-100CL
		US-PATENT-CLASS-29-571				US-PATENT-CLASS-361-56			US-PATENT-CLASS-455-278
		US-PATENT-CLASS-29-578				US-PATENT-CLASS-361-91			US-PATENT-4,278,978
		US-PATENT-CLASS-29-580				US-PATENT-4,264,940	N81-29342*	c 33	.....
		US-PATENT-CLASS-357-23				NASA-CASE-NPO-14521-1			NASA-CASE-GSC-12111-2
		US-PATENT-CLASS-357-55	N81-27519*	c 37	.....	US-PATENT-APPL-SN-023439			US-PATENT-APPL-SN-678813
		US-PATENT-CLASS-357-60				US-PATENT-CLASS-244-161			US-PATENT-APPL-SN-830272
		US-PATENT-CLASS-357-81				US-PATENT-CLASS-294-86R			US-PATENT-CLASS-350-96.25
		US-PATENT-4,272,302				US-PATENT-CLASS-318-640			US-PATENT-CLASS-365-120
N81-26402*	c 34	.....				US-PATENT-CLASS-356-152			US-PATENT-4,154,501
		NASA-CASE-KSC-11076-1				US-PATENT-CLASS-414-730	N81-29407*	c 35	.....
		US-PATENT-APPL-SN-051274				US-PATENT-4,260,187			NASA-CASE-LAR-12308-1
		US-PATENT-CLASS-364-510				US-PATENT-CLASS-356-416			US-PATENT-APPL-SN-111438
		US-PATENT-CLASS-364-571				US-PATENT-4,274,285			US-PATENT-CLASS-73-683.31
		US-PATENT-CLASS-73-861				US-PATENT-4,270,984			US-PATENT-CLASS-73-684.52
		US-PATENT-4,253,156	N81-27615* #	c 44	.....	NASA-CASE-LEW-13556-1			US-PATENT-4,274,285
N81-26431*	c 35	.....				US-PATENT-APPL-SN-272233	N81-29524*	c 44	.....
		NASA-CASE-FRC-10112-1				US-PATENT-CLASS-14002-1			NASA-CASE-LEW-13148-2
		US-PATENT-APPL-SN-122965	N81-27783*	c 52	.....	US-PATENT-APPL-SN-855364			US-PATENT-APPL-SN-081555
		US-PATENT-CLASS-219-209				US-PATENT-CLASS-128-665			US-PATENT-APPL-SN-964754
		US-PATENT-CLASS-219-210				US-PATENT-CLASS-356-406			US-PATENT-CLASS-204-2.1
		US-PATENT-CLASS-219-510				US-PATENT-CLASS-356-407			US-PATENT-4,192,910
		US-PATENT-CLASS-236-1F				US-PATENT-CLASS-356-416			US-PATENT-4,270,984
		US-PATENT-CLASS-361-334				US-PATENT-4,170,987	N81-29525*	c 44	.....
		US-PATENT-CLASS-73-361				NASA-CASE-LAR-12320-1			NASA-CASE-NPO-13689-2
		US-PATENT-4,264,802	N81-27806*	c 54	.....	US-PATENT-APPL-SN-043913			US-PATENT-APPL-SN-093714
N81-26447*	c 37	.....				US-PATENT-CLASS-434-59			US-PATENT-APPL-SN-597430
		NASA-CASE-LEW-12119-2				US-PATENT-4,264,310			US-PATENT-APPL-SN-683073
		US-PATENT-APPL-SN-102004				NASA-CASE-NPO-14554-1			US-PATENT-APPL-SN-837513
		US-PATENT-APPL-SN-672219	N81-27814*	c 60	.....	US-PATENT-APPL-SN-974473			US-PATENT-CLASS-136-255
		US-PATENT-CLASS-277-153				US-PATENT-CLASS-364-200			US-PATENT-CLASS-136-258
		US-PATENT-CLASS-277-193				US-PATENT-CLASS-364-900			US-PATENT-CLASS-136-262
		US-PATENT-4,212,477				US-PATENT-CLASS-370-58			US-PATENT-CLASS-357-15
		US-PATENT-4,266,788				US-PATENT-4,264,984			US-PATENT-CLASS-357-30
N81-26509*	c 43	.....				US-PATENT-CLASS-12520-1	N81-29763*	c 52	.....
		NASA-CASE-NPO-14140-1				US-PATENT-APPL-SN-067596			NASA-CASE-ARC-11031-1
		NASA-CASE-NPO-14387-1	N81-28698*	c 51	.....	US-PATENT-CLASS-204-1T			US-PATENT-APPL-SN-897828
		US-PATENT-APPL-SN-897832				US-PATENT-CLASS-204-195B			US-PATENT-CLASS-128-275
		US-PATENT-CLASS-134-17				US-PATENT-CLASS-435-291			US-PATENT-CLASS-128-760
		US-PATENT-CLASS-166-222				US-PATENT-CLASS-435-34			US-PATENT-4,190,060
		US-PATENT-CLASS-166-77				US-PATENT-CLASS-435-5	N81-29764*	c 52	.....
		US-PATENT-CLASS-239-562				US-PATENT-4,264,728			NASA-CASE-ARC-11118-1
		US-PATENT-CLASS-239-591				US-PATENT-APPL-SN-034531			US-PATENT-APPL-SN-850504
		US-PATENT-CLASS-289-13				US-PATENT-CLASS-128-295			US-PATENT-CLASS-424-247
		US-PATENT-CLASS-299-17				US-PATENT-CLASS-144.3			US-PATENT-CLASS-424-267
		US-PATENT-CLASS-299-20	N81-28740*	c 52	.....	US-PATENT-4,270,539			US-PATENT-CLASS-424-274
		US-PATENT-4,228,475				NASA-CASE-LEW-12990-1	N81-29963*	c 74	.....
N81-26718*	c 54	.....				US-PATENT-APPL-SN-916654			NASA-CASE-NPO-14448-1
		NASA-CASE-MFS-23696-1				US-PATENT-CLASS-261-28			US-PATENT-APPL-SN-037560
		US-PATENT-APPL-SN-945044				US-PATENT-CLASS-431-2			US-PATENT-CLASS-356-345
		US-PATENT-CLASS-294-93	N81-29129*	c 07	.....	US-PATENT-CLASS-60-39.06			US-PATENT-CLASS-356-346
		US-PATENT-CLASS-414-4				US-PATENT-CLASS-60-726			US-PATENT-4,278,351
		US-PATENT-CLASS-414-735				US-PATENT-CLASS-60-737	N81-32510*	c 37	.....
		US-PATENT-CLASS-414-744A				US-PATENT-4,189,914			NASA-CASE-MSC-16239-1
		US-PATENT-4,273,505				NASA-CASE-LAR-12052-1			US-PATENT-APPL-SN-847276
N81-27271*	c 27	.....	N81-29152*	c 18	.....	US-PATENT-CLASS-60-726			US-PATENT-CLASS-91-325
		NASA-CASE-ARC-11176-2				US-PATENT-CLASS-60-737			US-PATENT-CLASS-91-341R
		US-PATENT-APPL-SN-129798				US-PATENT-4,189,914			US-PATENT-CLASS-91-410
		US-PATENT-CLASS-528-168					N81-32829*	c 51	.....
		US-PATENT-CLASS-528-399							NASA-CASE-MFS-23825-1
		US-PATENT-CLASS-528-4							



				US-PATENT-APPL-SN-145273				US-PATENT-CLASS-528-351				US-PATENT-CLASS-250-235
				US-PATENT-CLASS-119-17				US-PATENT-CLASS-528-353				US-PATENT-CLASS-250-236
				US-PATENT-CLASS-119-18				US-PATENT-4,284,461				US-PATENT-CLASS-358-109
				US-PATENT-4,284,034				NASA-CASE-MSC-18606-1				US-PATENT-4,300,159
N81-33235*	c 24			NASA-CASE-LAR-12065-2	N82-11336*	c 32		US-PATENT-APPL-SN-145206	N82-15381*	c 35		NASA-CASE-NPO-14839-1
				US-PATENT-APPL-SN-119337				US-PATENT-CLASS-343-700MS				US-PATENT-APPL-SN-106119
				US-PATENT-APPL-SN-889671				US-PATENT-CLASS-343-708				US-PATENT-CLASS-343-100PE
				US-PATENT-CLASS-156-242				US-PATENT-CLASS-343-727				US-PATENT-CLASS-455-137
				US-PATENT-CLASS-156-245				US-PATENT-CLASS-343-795				US-PATENT-CLASS-455-139
				US-PATENT-CLASS-156-252				US-PATENT-CLASS-343-846				US-PATENT-CLASS-455-60
				US-PATENT-CLASS-156-264				US-PATENT-4,287,518				US-PATENT-4,295,140
				US-PATENT-CLASS-156-285	N82-11357*	c 33		NASA-CASE-MSC-18106-1	N82-16059*	c 04		NASA-CASE-ARC-10990-1
				US-PATENT-CLASS-156-290				US-PATENT-APPL-SN-098568				US-PATENT-APPL-SN-749420
				US-PATENT-4,229,473				US-PATENT-CLASS-335-256				US-PATENT-CLASS-244-114R
				US-PATENT-4,274,901				US-PATENT-CLASS-335-266				US-PATENT-CLASS-340-26
N81-33246*	c 25			NASA-CASE-NPO-14272-1				US-PATENT-CLASS-361-141				US-PATENT-4,291,294
				US-PATENT-APPL-SN-97822				US-PATENT-4,295,111	N82-16075*	c 06		NASA-CASE-FRC-11005-1
				US-PATENT-CLASS-201-17	N82-11360* #	c 33		NASA-CASE-MFS-25586-1				US-PATENT-APPL-SN-043942
				US-PATENT-CLASS-44-1R				US-PATENT-APPL-SN-310714				US-PATENT-CLASS-340-27NA
				US-PATENT-CLASS-44-2	N82-11399* #	c 34		NASA-CASE-LEW-12950-1				US-PATENT-4,283,705
				US-PATENT-4,146,367				US-PATENT-APPL-SN-202228				US-PATENT-4,283,705
N81-33319*	c 31			NASA-CASE-NPO-14596-1	N82-11431*	c 35		NASA-CASE-LAR-12552-1	N82-16174*	c 23		NASA-CASE-ARC-11244-1
				US-PATENT-APPL-SN-037072				US-PATENT-APPL-SN-070366				US-PATENT-APPL-SN-054501
				US-PATENT-CLASS-264-24				US-PATENT-CLASS-235-92PC				US-PATENT-CLASS-260-340.9R
				US-PATENT-CLASS-264-5				US-PATENT-CLASS-324-71CP				US-PATENT-CLASS-568-445
				US-PATENT-CLASS-264-9				US-PATENT-4,286,209				US-PATENT-CLASS-568-497
				US-PATENT-CLASS-425-6	N82-11432*	c 35		NASA-CASE-MFS-23250-1				US-PATENT-4,277,402
				US-PATENT-CLASS-65-142				US-PATENT-APPL-SN-119340	N82-16238*	c 27		NASA-CASE-MSC-18382-1
				US-PATENT-CLASS-65-21.4				US-PATENT-CLASS-422-40				US-PATENT-APPL-SN-145107
				US-PATENT-CLASS-65-22				US-PATENT-CLASS-430-17				US-PATENT-CLASS-106-18.16
				US-PATENT-4,278,632				US-PATENT-CLASS-430-372				US-PATENT-CLASS-106-18.24
N81-33403*	c 33			NASA-CASE-GSC-12324-1				US-PATENT-4,287,152				US-PATENT-CLASS-260-45.7R
				US-PATENT-APPL-SN-945043	N82-11469* #	c 37		NASA-CASE-NPO-15539-1				US-PATENT-CLASS-427-393.3
				US-PATENT-CLASS-358-109				US-PATENT-APPL-SN-303670				US-PATENT-CLASS-428-263
				US-PATENT-CLASS-358-213	N82-11634*	c 45		NASA-CASE-NPO-13877-1				US-PATENT-CLASS-428-264
				US-PATENT-4,280,141				US-PATENT-APPL-SN-652979				US-PATENT-CLASS-428-265
N81-33404*	c 33			NASA-CASE-NPO-14316-1				US-PATENT-CLASS-210-40				US-PATENT-CLASS-428-267
				US-PATENT-APPL-SN-051276				US-PATENT-CLASS-252-422				US-PATENT-CLASS-428-272
				US-PATENT-CLASS-363-24				US-PATENT-4,209,393				US-PATENT-4,284,682
				US-PATENT-CLASS-363-56	N82-11770*	c 52		NASA-CASE-MSC-14836-1	N82-16340*	c 33		NASA-CASE-GSC-12420-1
				US-PATENT-4,276,588				US-PATENT-APPL-SN-691647				US-PATENT-APPL-SN-129793
N81-33405*	c 33			NASA-CASE-NPO-14435-1				US-PATENT-CLASS-128-327				US-PATENT-CLASS-333-104
				US-PATENT-APPL-SN-017886				US-PATENT-CLASS-128-686				US-PATENT-CLASS-333-246
				US-PATENT-CLASS-329-122				US-PATENT-CLASS-128-691				US-PATENT-4,302,734
				US-PATENT-CLASS-331-DIG.2	N82-12166*	c 25		US-PATENT-4,294,261	N82-16396*	c 36		NASA-CASE-GSC-12321-1
				US-PATENT-CLASS-364-514				NASA-CASE-MSC-16497-1				US-PATENT-APPL-SN-102001
				US-PATENT-CLASS-375-1				US-PATENT-APPL-SN-041145				US-PATENT-CLASS-356-349
				US-PATENT-4,279,018				US-PATENT-CLASS-204-1T				US-PATENT-CLASS-356-386
N81-33448*	c 35			NASA-CASE-NPO-14258-1				US-PATENT-CLASS-204-195S				US-PATENT-4,299,492
				US-PATENT-APPL-SN-853349				US-PATENT-CLASS-204-263	N82-16408*	c 37		NASA-CASE-MSC-18422-1
				US-PATENT-APPL-SN-972252				US-PATENT-CLASS-204-264				US-PATENT-APPL-SN-102593
				US-PATENT-CLASS-350-370				US-PATENT-CLASS-204-266				US-PATENT-CLASS-244-113
				US-PATENT-CLASS-356-350				US-PATENT-CLASS-204-275				US-PATENT-CLASS-244-163
				US-PATENT-CLASS-356-351				US-PATENT-CLASS-204-276				US-PATENT-CLASS-244-217
				US-PATENT-4,280,766				US-PATENT-CLASS-204-278				US-PATENT-CLASS-277-189
N81-33482*	c 37			NASA-CASE-NPO-15227-1				US-PATENT-CLASS-23-230PC				US-PATENT-CLASS-277-81R
				US-PATENT-APPL-SN-163840				US-PATENT-CLASS-23-232E				US-PATENT-CLASS-418-113
				US-PATENT-CLASS-118-50				US-PATENT-CLASS-422-80				US-PATENT-CLASS-418-142
				US-PATENT-CLASS-118-52				US-PATENT-4,293,522				US-PATENT-4,290,612
				US-PATENT-CLASS-269-21	N82-12297*	c 32		NASA-CASE-NPO-14054-1	N82-16474*	c 44		NASA-CASE-MFS-23775-1
				US-PATENT-CLASS-427-240				US-PATENT-APPL-SN-969761				US-PATENT-APPL-SN-098569
				US-PATENT-4,280,689				US-PATENT-CLASS-343-5CM				US-PATENT-CLASS-73-341
N81-33483*	c 37			NASA-CASE-FRC-11044-1				US-PATENT-4,292,634				US-PATENT-4,282,752
				US-PATENT-APPL-SN-135056	N82-12441*	c 37		NASA-CASE-MFS-25363-1	N82-16475*	c 44		NASA-CASE-NPO-15071-1
				US-PATENT-CLASS-318-663				US-PATENT-APPL-SN-171933				US-PATENT-APPL-SN-150115
				US-PATENT-CLASS-74-89				US-PATENT-CLASS-118-423				US-PATENT-CLASS-126-438
				US-PATENT-CLASS-92-130R				US-PATENT-CLASS-118-500				US-PATENT-CLASS-250-527
				US-PATENT-4,274,038				US-PATENT-CLASS-134-137				US-PATENT-CLASS-48-89
N82-11088*	c 09			NASA-CASE-LAR-12532-1				US-PATENT-4,286,542				US-PATENT-CLASS-48-99
				US-PATENT-APPL-SN-135040	N82-12442*	c 37		NASA-CASE-LEW-12989-1				US-PATENT-4,290,779
				US-PATENT-CLASS-73-147				US-PATENT-APPL-SN-092145	N82-16747*	c 60		NASA-CASE-GSC-12430-1
				US-PATENT-4,286,460				US-PATENT-CLASS-277-27				US-PATENT-APPL-SN-129779
N82-11144*	c 25			NASA-CASE-NPO-14273-1				US-PATENT-CLASS-277-40				US-PATENT-CLASS-370-100
				US-PATENT-APPL-SN-969759				US-PATENT-CLASS-277-93R				US-PATENT-CLASS-375-106
				US-PATENT-CLASS-110-234				US-PATENT-4,291,887				US-PATENT-CLASS-375-114
				US-PATENT-CLASS-110-245	N82-12685*	c 46		NASA-CASE-NPO-14544-1				US-PATENT-CLASS-375-116
				US-PATENT-CLASS-110-255				US-PATENT-APPL-SN-078612				US-PATENT-4,298,987
				US-PATENT-CLASS-110-266				US-PATENT-CLASS-343-100ME	N82-16800*	c 71		NASA-CASE-FRC-11062-1
				US-PATENT-CLASS-122-4D				US-PATENT-CLASS-343-100PE				US-PATENT-APPL-SN-185869
				US-PATENT-4,287,838				US-PATENT-CLASS-343-781P				US-PATENT-CLASS-181-214
N82-11206*	c 27			NASA-CASE-LAR-12640-1				US-PATENT-4,282,525				US-PATENT-4,300,656
				US-PATENT-APPL-SN-092142	N82-13376*	c 34		NASA-CASE-MFS-25139-1	N82-18314*	c 20		NASA-CASE-GSC-12194-2
				US-PATENT-CLASS-156-307.7				US-PATENT-APPL-SN-126138				US-PATENT-APPL-SN-819029
				US-PATENT-CLASS-156-307.3				US-PATENT-CLASS-239-499				US-PATENT-APPL-SN-971474
				US-PATENT-CLASS-156-307.5				US-PATENT-CLASS-239-589				US-PATENT-CLASS-60-200R
				US-PATENT-CLASS-156-331.5				US-PATENT-CLASS-239-601				US-PATENT-CLASS-60-39.46M
				US-PATENT-CLASS-528-126				US-PATENT-4,300,723				US-PATENT-4,288,982
				US-PATENT-CLASS-528-172	N82-13415*	c 36		NASA-CASE-LAR-12592-1	N82-18389*	c 27		NASA-CASE-ARC-11176-1
				US-PATENT-CLASS-528-173				US-PATENT-APPL-SN-041141				US-PATENT-APPL-SN-129799
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				US-PATENT-CLASS-528-207				US-PATENT-CLASS-331-94.5D				US-PATENT-CLASS-528-399
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		US-PATENT-CLASS-428-244			US-PATENT-4,373,989			US-PATENT-4,382,224
		US-PATENT-CLASS-428-245	N83-20944*	c 07	NASA-CASE-MFS-23981-1	N83-27144*	c 34	NASA-CASE-LEW-13174-1
N83-17588* #	c 20	US-PATENT-CLASS-428-260			US-PATENT-APPL-SN-231543			
		US-PATENT-CLASS-428-331			US-PATENT-CLASS-244-159			
		US-PATENT-CLASS-428-368			US-PATENT-CLASS-244-173			
		US-PATENT-CLASS-428-902			US-PATENT-CLASS-322-2R			
		US-PATENT-CLASS-428-913			US-PATENT-CLASS-339-3R			

				US-PATENT-APPL-SN-200634				US-PATENT-4,386,157				US-PATENT-CLASS-428-678
				US-PATENT-CLASS-415-115	N83-29032*	c 74		NASA-CASE-KSC-11104-1	N83-31895*	c 31		US-PATENT-4,335,190
				US-PATENT-CLASS-416-1				US-PATENT-APPL-SN-153245				NASA-CASE-MFS-25134-1
				US-PATENT-CLASS-416-97R				US-PATENT-CLASS-350-86.16				US-PATENT-APPL-SN-195226
				US-PATENT-4,384,823				US-PATENT-CLASS-455-612				US-PATENT-CLASS-24-214
N83-27184*	c 35			NASA-CASE-NPO-15292-1	N83-29303*	c 18		US-PATENT-4,381,881				US-PATENT-CLASS-244-159
				US-PATENT-APPL-SN-207135				NASA-CASE-MFS-25403-1	N83-31896*	c 31		US-PATENT-4,381,583
				US-PATENT-CLASS-250-282				US-PATENT-APPL-SN-248745				NASA-CASE-NPO-14596-3
				US-PATENT-CLASS-250-288				US-PATENT-CLASS-244-115				US-PATENT-APPL-SN-303871
				US-PATENT-CLASS-250-423				US-PATENT-CLASS-244-161				US-PATENT-CLASS-264-5
				US-PATENT-4,383,171				US-PATENT-CLASS-269-152				US-PATENT-CLASS-264-9
N83-27344*	c 44			NASA-CASE-LEW-13248-1				US-PATENT-CLASS-269-242				US-PATENT-CLASS-425-6
				US-PATENT-APPL-SN-266255				US-PATENT-CLASS-269-244				US-PATENT-CLASS-65-142
				US-PATENT-CLASS-429-105				US-PATENT-CLASS-294-86R				US-PATENT-CLASS-65-214
				US-PATENT-CLASS-429-107				US-PATENT-4,391,423				US-PATENT-CLASS-65-22
				US-PATENT-CLASS-429-109	N83-29324*	c 25		NASA-CASE-GSC-12770-1	N83-31897*	c 31		US-PATENT-4,344,787
				US-PATENT-CLASS-429-34				US-PATENT-APPL-SN-301075				NASA-CASE-NPO-15251-1
				US-PATENT-CLASS-429-40				US-PATENT-CLASS-423-648R				US-PATENT-APPL-SN-229239
				US-PATENT-4,382,116				US-PATENT-CLASS-423-649				US-PATENT-CLASS-337-14
N83-27569*	c 51			NASA-CASE-GSC-12158-1				US-PATENT-4,393,039				US-PATENT-CLASS-62-48
				US-PATENT-APPL-SN-888434	N83-29386*	c 27		NASA-CASE-LEW-13132-1				US-PATENT-CLASS-62-514R
				US-PATENT-CLASS-422-52				US-PATENT-APPL-SN-272152				US-PATENT-4,368,680
				US-PATENT-CLASS-435-289				US-PATENT-CLASS-204-35N	N83-31918*	c 32		NASA-CASE-NPO-14525-2
				US-PATENT-CLASS-435-291				US-PATENT-CLASS-204-37R				US-PATENT-APPL-SN-165910
				US-PATENT-CLASS-435-3				US-PATENT-CLASS-204-56R				US-PATENT-CLASS-343-5CM
				US-PATENT-CLASS-435-34				US-PATENT-4,392,920				US-PATENT-CLASS-343-9PS
				US-PATENT-CLASS-435-38	N83-29392* #	c 27		NASA-CASE-LEW-12876-2				US-PATENT-CLASS-367-88
				US-PATENT-CLASS-435-39				US-PATENT-APPL-SN-393583				US-PATENT-4,355,311
				US-PATENT-CLASS-435-8	N83-29625*	c 34		NASA-CASE-LEW-12508-3	N83-31952*	c 33		NASA-CASE-LEW-13429-1
				US-PATENT-4,385,113				US-PATENT-APPL-SN-235868				US-PATENT-APPL-SN-220212
N83-27577*	c 52			NASA-CASE-MS-18761-1				US-PATENT-CLASS-62-3				US-PATENT-CLASS-315-3
				US-PATENT-APPL-SN-254688				US-PATENT-4,392,356				US-PATENT-CLASS-315-4
				US-PATENT-CLASS-128-DIG.13	N83-29650*	c 35		NASA-CASE-MFS-25242-1				US-PATENT-CLASS-315-5
				US-PATENT-CLASS-604-114				US-PATENT-APPL-SN-246773				US-PATENT-CLASS-315-5.35
				US-PATENT-CLASS-604-151				US-PATENT-CLASS-374-17				US-PATENT-CLASS-315-5.38
				US-PATENT-CLASS-73-204				US-PATENT-CLASS-73-863.11				US-PATENT-4,395,656
				US-PATENT-4,384,578				US-PATENT-4,389,904	N83-31953*	c 33		NASA-CASE-MFS-25215-1
N83-27578*	c 52			NASA-CASE-MS-18759-1	N83-29651*	c 35		NASA-CASE-LAR-12531-1				US-PATENT-APPL-SN-291131
				US-PATENT-APPL-SN-233270				US-PATENT-APPL-SN-282191				US-PATENT-CLASS-318-800
				US-PATENT-CLASS-128-660				US-PATENT-CASE-368-10				US-PATENT-CLASS-318-803
				US-PATENT-CLASS-128-663				US-PATENT-CASE-368-118				US-PATENT-CLASS-318-809
				US-PATENT-CLASS-73-597				US-PATENT-CASE-368-119				US-PATENT-4,394,610
				US-PATENT-4,383,533				US-PATENT-CASE-368-120	N83-31954*	c 33		NASA-CASE-NPO-14940-1
N83-27975*	c 05			NASA-CASE-FRC-11072-1				US-PATENT-CASE-368-6				US-PATENT-APPL-SN-135038
				US-PATENT-APPL-SN-230613				US-PATENT-CASE-368-9				US-PATENT-CLASS-324-466
				US-PATENT-CASE-179-146-R				US-PATENT-4,392,749				US-PATENT-CLASS-73-861.05
				US-PATENT-CASE-179-179	N83-29652*	c 35		NASA-CASE-MS-18936-1				US-PATENT-4,398,568
				US-PATENT-CASE-367-906				US-PATENT-APPL-SN-325082	N83-31993*	c 34		NASA-CASE-NPO-15400-1
				US-PATENT-4,388,502				US-PATENT-CLASS-55-194				US-PATENT-APPL-SN-246774
N83-28064*	c 18			NASA-CASE-GSC-12551-1				US-PATENT-CLASS-55-202				US-PATENT-CLASS-250-573
				US-PATENT-APPL-SN-182881				US-PATENT-4,392,874				US-PATENT-CLASS-73-64.4
				US-PATENT-CLASS-244-169	N83-29680*	c 36		NASA-CASE-MFS-25315-1				US-PATENT-4,391,129
				US-PATENT-CLASS-244-170				US-PATENT-APPL-SN-224232	N83-32026*	c 35		NASA-CASE-LAR-12728-1
				US-PATENT-4,386,750				US-PATENT-CASE-356-129				US-PATENT-APPL-SN-408575
N83-28240*	c 27			NASA-CASE-LAR-12775-1				US-PATENT-4,391,518				US-PATENT-CLASS-248-636
				US-PATENT-APPL-SN-308201	N83-29681* #	c 36		NASA-CASE-GSC-12609-2				US-PATENT-CLASS-248-638
				US-PATENT-CLASS-524-104				US-PATENT-APPL-SN-481020				US-PATENT-CLASS-62-295
				US-PATENT-CLASS-524-173	N83-29783* #	c 43		NASA-CASE-LAR-13053-1				US-PATENT-CLASS-62-514 R
				US-PATENT-CLASS-524-233				US-PATENT-APPL-SN-508372				US-PATENT-4,394,819
				US-PATENT-CLASS-524-726	N83-29991* #	c 52		NASA-CASE-ARC-11264-2	N83-32067*	c 37		NASA-CASE-GSC-12517-1
				US-PATENT-CLASS-525-181				US-PATENT-APPL-SN-465370				US-PATENT-APPL-SN-214361
				US-PATENT-CLASS-525-183	N83-31603*	c 07		NASA-CASE-LEW-14586-1				US-PATENT-CLASS-104-282
				US-PATENT-CLASS-525-184				US-PATENT-APPL-SN-163122				US-PATENT-CLASS-104-290
				US-PATENT-CLASS-525-474				US-PATENT-CLASS-415-1				US-PATENT-CLASS-308-10
				US-PATENT-4,389,504				US-PATENT-CLASS-415-175				US-PATENT-CLASS-310-12
N83-28319*	c 33			NASA-CASE-MFS-25302-1				US-PATENT-CLASS-415-178				US-PATENT-4,387,935
				US-PATENT-APPL-SN-243683				US-PATENT-CLASS-415-47	N83-32081*	c 39		NASA-CASE-LAR-12602-1
				US-PATENT-CLASS-322-29				US-PATENT-4,338,061				US-PATENT-APPL-SN-210506
				US-PATENT-CLASS-322-35	N83-31743*	c 25		NASA-CASE-NPO-15304-1				US-PATENT-CLASS-374-51
				US-PATENT-CLASS-322-47				US-PATENT-APPL-SN-315587				US-PATENT-CLASS-73-618
				US-PATENT-CLASS-322-95				US-PATENT-CLASS-201-17				US-PATENT-CLASS-73-822
				US-PATENT-4,388,585				US-PATENT-CLASS-44-1SR				US-PATENT-CLASS-73-856
N83-28356*	c 34			NASA-CASE-GSC-12553-1				US-PATENT-4,391,609				US-PATENT-CLASS-73-860
				US-PATENT-APPL-SN-106192	N83-31795*	c 26		NASA-CASE-LEW-13343				US-PATENT-4,393,716
				US-PATENT-CLASS-165-185				US-PATENT-APPL-SN-293418	N83-32175*	c 44		NASA-CASE-LEW-12443-1
				US-PATENT-CLASS-165-32				US-PATENT-CLASS-427-318				US-PATENT-APPL-SN-235797
				US-PATENT-CLASS-165-76				US-PATENT-CLASS-427-419.2				US-PATENT-CLASS-310-306
				US-PATENT-4,388,965				US-PATENT-CLASS-428-450				US-PATENT-4,373,142
N83-28573*	c 44			NASA-CASE-LAR-12495-1				US-PATENT-CLASS-428-469	N83-32176*	c 44		NASA-CASE-LEW-13171-2
				US-PATENT-APPL-SN-263830				US-PATENT-CLASS-428-641				US-PATENT-APPL-SN-333537
				US-PATENT-CLASS-310-11				US-PATENT-CLASS-428-650				US-PATENT-CLASS-29-623.5
				US-PATENT-4,388,542				US-PATENT-CLASS-428-680				US-PATENT-CLASS-429-144
N83-28574*	c 44			NASA-CASE-GSC-12697-1				US-PATENT-4,374,183				US-PATENT-CLASS-429-251
				US-PATENT-APPL-SN-308204	N83-31854*	c 27		NASA-CASE-ARC-11368-1				US-PATENT-CLASS-429-254
				US-PATENT-CLASS-308-10				US-PATENT-APPL-SN-288267				US-PATENT-4,371,596
				US-PATENT-CLASS-310-15				US-PATENT-CLASS-548-413	N83-32177*	c 44		NASA-CASE-LEW-13401-2
				US-PATENT-CLASS-417-417				US-PATENT-CLASS-548-415				US-PATENT-APPL-SN-359388
				US-PATENT-CLASS-62-6				US-PATENT-4,395,557				US-PATENT-CLASS-136-249
				US-PATENT-4,389,849	N83-31855*	c 27		NASA-CASE-LEW-1335901				US-PATENT-CLASS-357-30
N83-28849*	c 51			NASA-CASE-ARC-11322-1				US-PATENT-APPL-SN-229233				US-PATENT-4,376,872
				US-PATENT-APPL-SN-315278				US-PATENT-CLASS-427-219.2	N83-32232*	c 47		NASA-CASE-NPO-14936-1
				US-PATENT-CLASS-435-3				US-PATENT-CLASS-427-34				US-PATENT-APPL-SN-163837
				US-PATENT-CLASS-435-34				US-PATENT-CLASS-427-405				US-PATENT-CLASS-250-203R
				US-PATENT-CLASS-435-38				US-PATENT-CLASS-427-423				US-PATENT-CLASS-356-222
				US-PATENT-CLASS-435-39				US-PATENT-CLASS-428-623				US-PATENT-4,355,896
				US-PATENT-CLASS-435-807				US-PATENT-CLASS-428-633	N83-32342*	c 60		NASA-CASE-NPO-15342-1



N83-32515*	c 71	US-PATENT-APPL-SN-258623	US-PATENT-APPL-SN-276748	US-PATENT-CLASS-318-806
		US-PATENT-CLASS-364-200	US-PATENT-CLASS-315-208	US-PATENT-4,401,934
		US-PATENT-CLASS-364-900	US-PATENT-CLASS-315-224	NASA-CASE-GSC-12812-1
N83-32515*	c 71	US-PATENT-4,394,726	US-PATENT-CLASS-315-225	US-PATENT-APPL-SN-434674
		NASA-CASE-NPO-15453-1	US-PATENT-CLASS-315-237	US-PATENT-CLASS-165-104.26
		US-PATENT-APPL-SN-314929	US-PATENT-CLASS-315-241R	US-PATENT-CLASS-165-32
N83-32516*	c 71	US-PATENT-CLASS-60-721	US-PATENT-CLASS-372-25	US-PATENT-4,402,358
		US-PATENT-CLASS-73-505	US-PATENT-4,398,129	NASA-CASE-LEW-13934-1
		US-PATENT-4,393,708	NASA-CASE-MFS-25607-1	US-PATENT-APPL-SN-212949
N83-32516*	c 71	NASA-CASE-NPO-15522-1	US-PATENT-APPL-SN-325886	US-PATENT-CLASS-228-103
		US-PATENT-APPL-SN-303672	US-PATENT-CLASS-361-90	US-PATENT-CLASS-228-193
		US-PATENT-CLASS-60-721	US-PATENT-CLASS-318-729	US-PATENT-CLASS-228-263.18
N83-32577*	c 74	US-PATENT-CLASS-73-505	US-PATENT-CLASS-318-798	US-PATENT-CLASS-415-118
		US-PATENT-4,393,706	US-PATENT-CLASS-318-806	US-PATENT-4,402,447
		NASA-CASE-GSC-12614-1	US-PATENT-CLASS-381-100	NASA-CASE-NPO-15201-1
N83-33882*	c 06	US-PATENT-APPL-SN-195227	US-PATENT-CLASS-363-54	US-PATENT-APPL-SN-246778
		US-PATENT-CLASS-356-353	US-PATENT-4,400,657	US-PATENT-CLASS-330-4
		US-PATENT-CLASS-356-363	NASA-CASE-GSC-12646-1	US-PATENT-CLASS-332-7.5
N83-33882*	c 06	US-PATENT-4,395,123	US-PATENT-APPL-SN-284290	US-PATENT-CLASS-333-24.2
		NASA-CASE-FRC-11043-1	US-PATENT-CLASS-330-289	US-PATENT-4,399,415
		US-PATENT-APPL-SN-242790	US-PATENT-CLASS-330-310	NASA-CASE-NPO-15334-1
N83-33884*	c 07	US-PATENT-CLASS-33-322	US-PATENT-4,401,953	US-PATENT-APPL-SN-341406
		US-PATENT-CLASS-74-5.34	NASA-CASE-LAR-12393-1	US-PATENT-CLASS-210-748
		US-PATENT-4,387,513	US-PATENT-APPL-SN-145208	US-PATENT-CLASS-252-361
N83-33950*	c 24	NASA-CASE-ARC-10812-1	US-PATENT-CLASS-165-27	US-PATENT-CLASS-366-114
		US-PATENT-APPL-SN-657903	US-PATENT-CLASS-165-12	US-PATENT-CLASS-55-15
		US-PATENT-CLASS-181-213	US-PATENT-CLASS-165-61	US-PATENT-CLASS-55-277
N83-33950*	c 24	US-PATENT-CLASS-239-265.17	US-PATENT-CLASS-165-80E	US-PATENT-CLASS-55-38
		US-PATENT-CLASS-60-262	US-PATENT-CLASS-374-46	US-PATENT-CLASS-55-52
		US-PATENT-CLASS-60-269	US-PATENT-CLASS-62-514R	US-PATENT-CLASS-65-134
N83-33977*	c 25	US-PATENT-CLASS-60-271	US-PATENT-CLASS-62-62	US-PATENT-4,396,925
		US-PATENT-4,372,110	US-PATENT-4,346,754	NASA-CASE-NPO-15530-1
		NASA-CASE-NPO-14987-1	NASA-CASE-ARC-11317-1	US-PATENT-APPL-SN-364092
N83-34039*	c 27	US-PATENT-APPL-SN-164-584	US-PATENT-APPL-SN-229231	US-PATENT-CLASS-156-DIG.6
		US-PATENT-CLASS-427-215	US-PATENT-CLASS-340-518	US-PATENT-CLASS-156-DIG.73
		US-PATENT-CLASS-427-241	US-PATENT-CLASS-340-566	US-PATENT-CLASS-156-608
N83-34039*	c 27	US-PATENT-CLASS-428-367	US-PATENT-4,374,375	US-PATENT-4,401,505
		US-PATENT-CLASS-428-375	NASA-CASE-ARC-11312-1	NASA-CASE-LAR-12624-1
		US-PATENT-CLASS-428-392	US-PATENT-APPL-SN-234224	US-PATENT-APPL-SN-259209
N83-34040*	c 27	US-PATENT-CLASS-428-902	US-PATENT-CLASS-356-1	US-PATENT-CLASS-102-378
		US-PATENT-CLASS-428-903	US-PATENT-CLASS-356-4	US-PATENT-CLASS-244-137P
		US-PATENT-4,359,503	US-PATENT-CLASS-358-104	US-PATENT-CLASS-89-1B
N83-34040*	c 27	NASA-CASE-ARC-11326-1	US-PATENT-CLASS-358-109	US-PATENT-4,407,468
		US-PATENT-APPL-SN-178192	US-PATENT-CLASS-434-38	NASA-CASE-LEW-13142-1
		US-PATENT-CLASS-252-5	US-PATENT-CLASS-434-4	US-PATENT-APPL-SN-132984
N83-34043*	c 27	US-PATENT-CLASS-423-419P	US-PATENT-4,391,514	US-PATENT-CLASS-60-39.07
		US-PATENT-CLASS-423-600	NASA-CASE-GSC-12728-1	US-PATENT-4,404,793
		US-PATENT-CLASS-424-156	US-PATENT-APPL-SN-364093	NASA-CASE-ARC-11252-1
N83-34043*	c 27	US-PATENT-4,356,157	US-PATENT-CLASS-308-10	US-PATENT-APPL-SN-317977
		NASA-CASE-GSC-12686-1	US-PATENT-4,381,375	US-PATENT-CLASS-169-47
		US-PATENT-APPL-SN-293412	NASA-CASE-ARC-11164-1	US-PATENT-CLASS-252-2
N83-34043*	c 27	US-PATENT-CLASS-427-322	US-PATENT-APPL-SN-308007	US-PATENT-CLASS-252-5
		US-PATENT-CLASS-427-340	US-PATENT-CLASS-350-166	US-PATENT-4,406,797
		US-PATENT-CLASS-427-352	US-PATENT-CLASS-428-312.6	NASA-CASE-MFS-25436-1
N83-34043*	c 27	US-PATENT-CLASS-427-400	US-PATENT-CLASS-428-325	US-PATENT-APPL-SN-280151
		US-PATENT-CLASS-427-407.1	US-PATENT-CLASS-428-427	US-PATENT-CLASS-156-DIG.73
		US-PATENT-4,362,769	US-PATENT-CLASS-428-428	US-PATENT-CLASS-156-DIG.89
N83-34044*	c 27	NASA-CASE-LAR-12838-1	US-PATENT-4,381,333	US-PATENT-CLASS-156-600
		US-PATENT-APPL-SN-320621	NASA-CASE-LAR-12719-1	US-PATENT-CLASS-156-610
		US-PATENT-CLASS-526-259	US-PATENT-APPL-SN-367134	US-PATENT-CLASS-165-2
N83-34044*	c 27	US-PATENT-CLASS-526-285	US-PATENT-CLASS-126-901	US-PATENT-CLASS-165-58
		US-PATENT-CLASS-528-12	US-PATENT-CLASS-204-33	US-PATENT-CLASS-219-343
		US-PATENT-CLASS-528-125	US-PATENT-CLASS-204-35N	US-PATENT-CLASS-219-354
N83-34044*	c 27	US-PATENT-CLASS-528-126	US-PATENT-4,397,716	US-PATENT-CLASS-219-390
		US-PATENT-CLASS-528-128	NASA-CASE-LEW-12582-1	US-PATENT-CLASS-219-411
		US-PATENT-CLASS-528-220	US-PATENT-APPL-SN-397281	US-PATENT-CLASS-350-316
N83-34044*	c 27	US-PATENT-CLASS-528-222	US-PATENT-CLASS-310-332	US-PATENT-4,408,658
		US-PATENT-CLASS-528-228	US-PATENT-CLASS-310-800	NASA-CASE-GSC-12630-1
		US-PATENT-CLASS-528-229	US-PATENT-CLASS-428-294	US-PATENT-APPL-SN-308009
N83-34044*	c 27	US-PATENT-CLASS-528-38	US-PATENT-CLASS-428-421	US-PATENT-CLASS-343-100AP
		US-PATENT-4,375,536	US-PATENT-CLASS-428-422	US-PATENT-CLASS-343-840
		NASA-CASE-LAR-12858-1	US-PATENT-4,400,842	US-PATENT-4,407,001
N83-34044*	c 27	US-PATENT-APPL-SN-407240	NASA-CASE-NPO-15070-1	NASA-CASE-KSC-11170-1
		US-PATENT-CLASS-164-331.12	US-PATENT-APPL-SN-403847	US-PATENT-APPL-SN-284288
		US-PATENT-CLASS-264-137	US-PATENT-CLASS-264-12	US-PATENT-CLASS-330-110
N83-34043*	c 27	US-PATENT-CLASS-264-258	US-PATENT-CLASS-264-24	US-PATENT-CLASS-330-282
		US-PATENT-CLASS-264-331.46	US-PATENT-CLASS-264-5	US-PATENT-4,406,989
		US-PATENT-CLASS-528-222	US-PATENT-CLASS-425-10	NASA-CASE-LAR-12654-1
N83-34043*	c 27	US-PATENT-CLASS-528-226	US-PATENT-CLASS-425-6	US-PATENT-APPL-SN-234225
		US-PATENT-4,398,021	US-PATENT-CLASS-425-7	US-PATENT-CLASS-368-184
		NASA-CASE-NPO-15202-1	US-PATENT-CLASS-65-142	US-PATENT-CLASS-368-200
N83-34073*	c 31	US-PATENT-APPL-SN-233271	US-PATENT-CLASS-65-21.3	US-PATENT-CLASS-368-201
		US-PATENT-CLASS-384-124	US-PATENT-CLASS-65-21.4	US-PATENT-4,407,589
		US-PATENT-CLASS-523-440	US-PATENT-CLASS-65-22	NASA-CASE-MSC-18791-1
N83-34073*	c 31	US-PATENT-CLASS-523-443	US-PATENT-4,400,191	US-PATENT-APPL-SN-248746
		US-PATENT-4,395,503	NASA-CASE-LEW-13450-1	US-PATENT-CLASS-29-446
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		US-PATENT-APPL-SN-5226628			US-PATENT-CLASS-251-267				NASA-CASE-LAR-12775-2
		US-PATENT-CLASS-244-214			US-PATENT-CLASS-251-284				US-PATENT-APPL-SN-308201
		US-PATENT-CLASS-244-90R			US-PATENT-CLASS-251-297				US-PATENT-APPL-SN-481788
		US-PATENT-4,485,992			US-PATENT-CLASS-74-424.8B				US-PATENT-CLASS-525-181
N85-19990*	c 09	.....	NAS 1.71: KSC-11218-1		US-PATENT-CLASS-74-424.8VA				US-PATENT-CLASS-525-182
			NASA-CASE-KSC-11218-1		US-PATENT-4,483,512				US-PATENT-CLASS-525-183
			US-PATENT-APPL-SN-387649	N85-20530*	c 44	.....	NAS 1.71: LEW-13414-1		US-PATENT-CLASS-525-184
			US-PATENT-CLASS-434-242						US-PATENT-CLASS-525-474
			US-PATENT-CLASS-434-243						US-PATENT-4,389,504
			US-PATENT-CLASS-434-35						US-PATENT-4,497,935
			US-PATENT-CLASS-434-49						N85-21350*
			US-PATENT-4,480,117						c 27
N85-20123*	c 27	.....	NAS 1.71: LAR-12723-1	N85-21147*	c 05	.....	NAS 1.71: LAR-12979-1		NAS 1.71: LEW-13770-3
			NASA-CASE-LAR-12723-1						NASA-CASE-LEW-13770-3
			US-PATENT-APPL-SN-199768						US-PATENT-APPL-SN-516217
			US-PATENT-CLASS-525-420						US-PATENT-APPL-SN-561431
			US-PATENT-CLASS-528-183						US-PATENT-CLASS-526-217
			US-PATENT-CLASS-528-182						US-PATENT-CLASS-526-282
			US-PATENT-CLASS-528-220						US-PATENT-CLASS-528-229
			US-PATENT-CLASS-528-336						US-PATENT-CLASS-528-315
			US-PATENT-CLASS-528-345	N85-21178*	c 09	.....	NAS 1.71: LAR-13014-1		US-PATENT-CLASS-528-322
			US-PATENT-4,395,540				NASA-CASE-LAR-13014-1		US-PATENT-CLASS-528-336
N85-20124*	c 27	.....	NAS 1.71: LAR-12858-2				US-PATENT-APPL-SN-527918		US-PATENT-CLASS-528-342
			NASA-CASE-LAR-12858-2				US-PATENT-CLASS-73-147	N85-21351*	c 27
			US-PATENT-APPL-SN-407240				US-PATENT-4,493,211		NAS 1.71: LEW-13770-4
			US-PATENT-APPL-SN-492282	N85-21256*	c 20	.....	NAS 1.71: LEW-13881-1		NASA-CASE-LEW-13770-4
			US-PATENT-CLASS-264-DIG.85				NASA-CASE-LEW-13881-1		US-PATENT-APPL-SN-516217
			US-PATENT-CLASS-264-112				US-PATENT-APPL-SN-473498		US-PATENT-APPL-SN-561429
			US-PATENT-CLASS-264-120				US-PATENT-CLASS-60-202		US-PATENT-CLASS-528-262
			US-PATENT-CLASS-264-137				US-PATENT-4,466,242		US-PATENT-CLASS-528-229
			US-PATENT-CLASS-264-152	N85-21266*	c 24	.....	NAS 1.71: LEW-13324-2		US-PATENT-CLASS-528-322
			US-PATENT-CLASS-264-258				NASA-CASE-LEW-13324-2		US-PATENT-CLASS-528-342
			US-PATENT-CLASS-264-331.12				US-PATENT-APPL-SN-375784		US-PATENT-4,497,939
			US-PATENT-CLASS-264-331.19				US-PATENT-APPL-SN-523297	N85-21352*	c 27
			US-PATENT-CLASS-528-226				US-PATENT-CLASS-428-633		NAS 1.71: LEW-13770-5
			US-PATENT-CLASS-528-239				US-PATENT-CLASS-428-656		NASA-CASE-LEW-13770-5
			US-PATENT-CLASS-528-241				US-PATENT-CLASS-428-678		US-PATENT-APPL-SN-516217
			US-PATENT-CLASS-528-258				US-PATENT-CLASS-428-679		US-PATENT-APPL-SN-561435
			US-PATENT-CLASS-528-279				US-PATENT-CLASS-428-680		US-PATENT-CLASS-526-262
			US-PATENT-4,398,021				US-PATENT-CLASS-428-681		US-PATENT-CLASS-528-229
			US-PATENT-4,489,027				US-PATENT-CLASS-428-682		US-PATENT-CLASS-528-322
N85-20125*	c 27	.....	NAS 1.71: LAR-12894-1				US-PATENT-CLASS-428-683		US-PATENT-CLASS-528-342
			NASA-CASE-LAR-12894-1				US-PATENT-CLASS-428-684	N85-21404*	c 31
			US-PATENT-APPL-SN-516087				US-PATENT-4,485,151		NAS 1.71: GSC-12799-1
			US-PATENT-CLASS-156-273.7	N85-21267*	c 24	.....	NAS 1.71: LEW-13837-2		NASA-CASE-GSC-12799-1
			US-PATENT-CLASS-24-304				NASA-CASE-LEW-13837-2		US-PATENT-APPL-SN-461724
			US-PATENT-CLASS-24-447				US-PATENT-APPL-SN-495381		US-PATENT-CLASS-31-35
			US-PATENT-CLASS-24-450				US-PATENT-APPL-SN-591089		US-PATENT-CLASS-310-22
			US-PATENT-CLASS-24-693				US-PATENT-CLASS-204-192C		US-PATENT-CLASS-417-417
			US-PATENT-4,488,335				US-PATENT-CLASS-204-192N		US-PATENT-CLASS-62-6
N85-20126*	c 27	.....	NAS 1.71: MFS-25862-1				US-PATENT-CLASS-204-192R		US-PATENT-CLASS-92-98R
			NASA-CASE-MFS-25862-1				US-PATENT-CLASS-423-445		US-PATENT-4,500,265
			US-PATENT-APPL-SN-465386				US-PATENT-CLASS-423-446	N85-21427*	c 32
			US-PATENT-CLASS-73-579				US-PATENT-CLASS-423-449		NAS 1.71: MSC-18578-1
			US-PATENT-CLASS-73-582				US-PATENT-CLASS-427-39		NASA-CASE-MSC-18578-1
			US-PATENT-CLASS-73-588				US-PATENT-4,437,962		US-PATENT-APPL-SN-367132
			US-PATENT-4,479,386				US-PATENT-4,495,044		US-PATENT-CLASS-358-161
N85-20153*	c 31	.....	NAS 1.71: LEW-14080-1	N85-21279*	c 25	.....	NAS 1.71: GSC-12808-1		US-PATENT-CLASS-358-174
			NASA-CASE-LEW-14080-1				NASA-CASE-GSC-12808-1		US-PATENT-CLASS-358-217
			US-PATENT-APPL-SN-628866				US-PATENT-APPL-SN-462497		US-PATENT-CLASS-358-219
			US-PATENT-CLASS-204-192C				US-PATENT-CLASS-376-159	N85-21428*	c 32
			US-PATENT-CLASS-204-192R				US-PATENT-4,483,817		NAS 1.71: NPO-15433-1
			US-PATENT-CLASS-204-192SP	N85-21280*	c 25	.....	NAS 1.71: MFS-25721-1		NASA-CASE-NPO-15433-1
			US-PATENT-CLASS-423-DIG.10				NASA-CASE-MFS-25721-1		US-PATENT-APPL-SN-250585
			US-PATENT-CLASS-423-414				US-PATENT-APPL-SN-492964		US-PATENT-CLASS-364-200
			US-PATENT-CLASS-423-445				US-PATENT-CLASS-556-410		US-PATENT-4,493,021
			US-PATENT-CLASS-423-446				US-PATENT-4,474,975	N85-21491*	c 33
			US-PATENT-CLASS-423-449				NAS 1.71: ARC-11368-2		NAS 1.71: NPO-15560-1
			US-PATENT-4,490,229	N85-21347*	c 27	.....	NASA-CASE-ARC-11368-2		NASA-CASE-NPO-15560-1
N85-20294*	c 35	.....	NAS 1.71: GSC-12789-1				US-PATENT-APPL-SN-175452		US-PATENT-APPL-SN-275909
			NASA-CASE-GSC-12789-1				US-PATENT-APPL-SN-288267		US-PATENT-CLASS-250-426
			US-PATENT-APPL-SN-409680				US-PATENT-APPL-SN-502820		US-PATENT-CLASS-313-131A
			US-PATENT-CLASS-177-147				US-PATENT-CLASS-526-262		US-PATENT-CLASS-315-111.31
			US-PATENT-CLASS-177-260				US-PATENT-CLASS-526-274		US-PATENT-CLASS-315-111.81
			US-PATENT-CLASS-73-862.54				US-PATENT-CLASS-528-167	N85-21492*	c 33
			US-PATENT-4,479,560				US-PATENT-CLASS-528-168		NAS 1.71: LEW-13833-1
N85-20295*	c 35	.....	NAS 1.71: LAR-13065-1				US-PATENT-CLASS-528-170		NASA-CASE-LEW-13833-1
			NASA-CASE-LAR-13065-1				US-PATENT-CLASS-528-171		US-PATENT-APPL-SN-486471
			US-PATENT-APPL-SN-484745				US-PATENT-CLASS-528-322		US-PATENT-CLASS-136-255
			US-PATENT-CLASS-73-187				US-PATENT-4,276,344		US-PATENT-CLASS-357-12
			US-PATENT-4,485,671				US-PATENT-4,395,557		US-PATENT-CLASS-357-30
N85-20300* #	c 35	.....	NAS 1.71: MFS-28008-1				US-PATENT-4,496,701	N85-21493*	c 33
			NASA-CASE-MFS-28008-1	N85-21348*	c 27	.....	NASA-CASE-ARC-11413-1		NAS 1.71: NPO-15920-1
			US-PATENT-APPL-SN-684184				US-PATENT-APPL-SN-440656		NASA-CASE-NPO-15920-1
			US-PATENT-CLASS-12582-2				US-PATENT-CLASS-528-125		US-PATENT-APPL-SN-403848
			NASA-CASE-GSC-12582-2				US-PATENT-CLASS-528-126		US-PATENT-CLASS-343-17.7
			US-PATENT-APPL-SN-220213				US-PATENT-CLASS-528-128		US-PATENT-CLASS-343-376
			US-PATENT-APPL-SN-415960				US-PATENT-CLASS-528-166	N85-21568*	c 34
			US-PATENT-CLASS-104-281				US-PATENT-CLASS-528-165		NAS 1.71: LAR-12588-1
			US-PATENT-CLASS-104-284				US-PATENT-CLASS-528-186		NASA-CASE-LAR-12588-1
			US-PATENT-CLASS-308-10				US-PATENT-CLASS-528-187		US-PATENT-APPL-SN-234222
			US-PATENT-4,473,259				US-PATENT-CLASS-528-226		US-PATENT-CLASS-165-104.26
N85-20338*	c 37	.....	NAS 1.71: MSC-20112-1				US-PATENT-CLASS-528-229		US-PATENT-CLASS-73-179
			NASA-CASE-MSC-20112-1				US-PATENT-CLASS-528-352		US-PATENT-CLASS-73-708
			US-PATENT-APPL-SN-392104				US-PATENT-CLASS-528-353	N85-21595*	c 35
							US-PATENT-4,499,260		NAS 1.71: MSC-20275-1
									NASA-CASE-MSC-20275-1
									US-PATENT-APPL-SN-425205
									US-PATENT-CLASS-222-309



			US-PATENT-CLASS-222-340				US-PATENT-CLASS-343-5W				US-PATENT-CLASS-358-109
			US-PATENT-CLASS-222-43				US-PATENT-4,463,357				US-PATENT-CLASS-358-133
			US-PATENT-CLASS-222-48				NAS 1.71:NPO-15295-1				US-PATENT-4,513,317
N85-21596*	c 35		US-PATENT-4,488,663	N85-21992*	c 60		NASA-CASE-NPO-15295-1	N85-29118*	c 32		NASA-CASE-NPO-15743-1
			NAS 1.71:NPO-15759-1				US-PATENT-APPL-SN-291645				US-PATENT-APPL-SN-448881
			NASA-CASE-NPO-15759-1				US-PATENT-CLASS-364-200				US-PATENT-CLASS-343-876
			US-PATENT-APPL-SN-367136				US-PATENT-4,481,570				US-PATENT-CLASS-455-73
			US-PATENT-CLASS-324-427	N85-22104*	c 71		NAS 1.71:NPO-15466-1	N85-29142*	c 33		US-PATENT-4,503,436
			US-PATENT-CLASS-429-58				NASA-CASE-NPO-15466-1				NASA-CASE-NPO-15553-1
			US-PATENT-4,499,424				US-PATENT-APPL-SN-361217				US-PATENT-APPL-SN-437912
N85-21597*	c 35		NAS 1.71:NPO-16027-1				US-PATENT-CLASS-23-313R				US-PATENT-CLASS-156-DIG.62
			NASA-CASE-NPO-16027-1				US-PATENT-CLASS-55-15				US-PATENT-CLASS-364-400
			US-PATENT-APPL-SN-500044				US-PATENT-CLASS-55-277				US-PATENT-CLASS-364-453
			US-PATENT-CLASS-73-40.5A				US-PATENT-4,475,921				US-PATENT-CLASS-74-5.6D
			US-PATENT-CLASS-73-753	N85-22105*	c 71		NAS 1.71:NPO-16022-1				US-PATENT-4,521,854
			US-PATENT-4,498,333				NASA-CASE-NPO-16022-1	N85-29143*	c 33		NASA-CASE-NPO-15890-1-CU
N85-21598*	c 35		NAS 1.71:WLP-10055-2				US-PATENT-APPL-SN-526750				US-PATENT-APPL-SN-556513
			NASA-CASE-WLP-10055-2				US-PATENT-CLASS-73-505				US-PATENT-CLASS-331-3
			US-PATENT-APPL-SN-352827				US-PATENT-4,463,606				US-PATENT-CLASS-331-31
			US-PATENT-APPL-SN-526770	N85-22139*	c 74		NAS 1.71:NPO-15155-1				US-PATENT-CLASS-331-36C
			US-PATENT-CLASS-29-610SG				NASA-CASE-NPO-15155-1				US-PATENT-CLASS-331-94.1
			US-PATENT-4,425,608				US-PATENT-APPL-SN-242797				US-PATENT-CLASS-331-96
			US-PATENT-4,498,231				US-PATENT-CLASS-250-221				US-PATENT-CLASS-333-231
N85-21631*	c 36		NAS 1.71:NPO-15790-1				US-PATENT-CLASS-340-555	N85-29144*	c 33		US-PATENT-4,517,530
			NASA-CASE-NPO-15790-1				US-PATENT-4,479,053				NASA-CASE-LEW-13102-1
			US-PATENT-APPL-SN-423016	N85-22877*	c 33		NAS 1.71:MFS-25861-1				US-PATENT-APPL-SN-282298
			US-PATENT-CLASS-250-339				NASA-CASE-MFS-25861-1				US-PATENT-CLASS-429-206
			US-PATENT-CLASS-250-343				US-PATENT-APPL-SN-504345				US-PATENT-CLASS-429-249
			US-PATENT-4,489,239				US-PATENT-CLASS-318-729	N85-29145*	c 33		US-PATENT-4,505,998
N85-21639*	c 36		NAS 1.71:GSC-12558-1				US-PATENT-CLASS-318-812				NASA-CASE-GSC-12788-1
			NASA-CASE-GSC-12558-1				US-PATENT-4,489,262				US-PATENT-APPL-SN-434085
			US-PATENT-APPL-SN-383086	N85-23396*	c 74		NAS 1.71:NPO-15801-1				US-PATENT-CLASS-307-271
			US-PATENT-CLASS-356-43				NASA-CASE-NPO-15801-1				US-PATENT-CLASS-307-520
			US-PATENT-CLASS-356-45				US-PATENT-APPL-SN-478130				US-PATENT-CLASS-307-521
			US-PATENT-CLASS-374-137				US-PATENT-CLASS-350-168				US-PATENT-CLASS-307-529
			US-PATENT-CLASS-73-705				US-PATENT-CLASS-350-505				US-PATENT-CLASS-328-167
			US-PATENT-4,493,553				US-PATENT-CLASS-350-619				US-PATENT-CLASS-330-302
N85-21649*	c 37		NAS 1.71:MSC-20319-1				US-PATENT-CLASS-356-323				US-PATENT-CLASS-330-306
			NASA-CASE-MSC-20319-1				US-PATENT-CLASS-356-330	N85-29146*	c 33		US-PATENT-4,521,702
			US-PATENT-APPL-SN-393582				US-PATENT-CLASS-356-331				NASA-CASE-GSC-12817-1
			US-PATENT-CLASS-292-252				US-PATENT-4,497,540				US-PATENT-APPL-SN-506477
			US-PATENT-CLASS-403-317	N85-25436* #	c 24		NAS 1.15:76884				US-PATENT-CLASS-336-198
			US-PATENT-CLASS-81-177G				NASA-TM-76884				US-PATENT-CLASS-336-84C
			US-PATENT-4,483,639	N85-28973*	c 23		NASA-CASE-LAR-13262-1	N85-29147*	c 33		US-PATENT-4,510,476
N85-21650*	c 37		NAS 1.71:NPO-15483-1				US-PATENT-APPL-SN-608741				NASA-CASE-GSC-12818-1
			NASA-CASE-NPO-15483-1				US-PATENT-CLASS-525-532				US-PATENT-APPL-SN-511362
			US-PATENT-APPL-SN-387648				US-PATENT-CLASS-525-534				US-PATENT-CLASS-307-82
			US-PATENT-CLASS-125-13R				US-PATENT-CLASS-528-86				US-PATENT-CLASS-363-100
			US-PATENT-CLASS-125-15				US-PATENT-4,510,296				US-PATENT-CLASS-363-19
			US-PATENT-CLASS-51-73R	N85-28982*	c 25		NASA-CASE-LEW-13770-1				US-PATENT-CLASS-363-23
			US-PATENT-CLASS-82-90				US-PATENT-APPL-SN-404809				US-PATENT-CLASS-363-61
			US-PATENT-CLASS-83-664				US-PATENT-APPL-SN-516217				US-PATENT-CLASS-363-71
			US-PATENT-CLASS-83-676				US-PATENT-CLASS-526-262				US-PATENT-CLASS-378-104
			US-PATENT-4,475,527				US-PATENT-CLASS-528-322				US-PATENT-CLASS-378-112
N85-21651*	c 37		NAS 1.71:LAR-12868-1				US-PATENT-CLASS-528-342	N85-29179*	c 34		US-PATENT-4,517,472
			NASA-CASE-LAR-12868-1				US-PATENT-4,455,418				NASA-CASE-LEW-12950-2
			US-PATENT-APPL-SN-322321				US-PATENT-4,514,557				US-PATENT-APPL-SN-202228
			US-PATENT-CLASS-374-208	N85-29005*	c 26		NASA-CASE-NPO-15928-1				US-PATENT-APPL-SN-507626
			US-PATENT-CLASS-374-210				US-PATENT-APPL-SN-537616				US-PATENT-CLASS-165-104.14
			US-PATENT-4,491,427				US-PATENT-CLASS-204-192N				US-PATENT-CLASS-165-32
N85-21652*	c 37		NAS 1.71:NPO-15851-1				US-PATENT-CLASS-427-38				US-PATENT-CLASS-310-306
			NASA-CASE-NPO-15851-1				US-PATENT-CLASS-427-47	N85-29180*	c 34		US-PATENT-4,506,183
			US-PATENT-APPL-SN-415879				US-PATENT-4,522,844				NASA-CASE-MSC-20497-1
			US-PATENT-CLASS-134-37	N85-29043*	c 27		NASA-CASE-NPO-16103-1				US-PATENT-APPL-SN-615505
			US-PATENT-CLASS-15-406				US-PATENT-APPL-SN-617871				US-PATENT-CLASS-122-366
			US-PATENT-CLASS-422-129				US-PATENT-CLASS-525-26				US-PATENT-CLASS-165-1
			US-PATENT-CLASS-422-199				US-PATENT-CLASS-525-47				US-PATENT-CLASS-165-104.26
			US-PATENT-4,500,492				US-PATENT-CLASS-526-328	N85-29182* #	c 34		US-PATENT-4,515,207
N85-21723*	c 43		NAS 1.71:NPO-15651-1				US-PATENT-CLASS-526-329.2				NAS 1.71:NPO-16494-1-CU
			NASA-CASE-NPO-15651-1				US-PATENT-CLASS-528-288				NASA-CASE-NPO-16494-1-CU
			US-PATENT-APPL-SN-375620				US-PATENT-CLASS-528-289				US-PATENT-APPL-SN-739789
			US-PATENT-CLASS-343-352				US-PATENT-CLASS-528-303	N85-29212*	c 35		NASA-CASE-NPO-15722-1
			US-PATENT-CLASS-374-122				US-PATENT-CLASS-528-304				US-PATENT-APPL-SN-457992
			US-PATENT-4,499,470				US-PATENT-4,523,008				US-PATENT-CLASS-204-1T
N85-21768*	c 44		NAS 1.71:LEW-13827-1	N85-29044*	c 27		NASA-CASE-GSC-12883-1				US-PATENT-CLASS-204-430
			NASA-CASE-LEW-13827-1				US-PATENT-APPL-SN-604337				US-PATENT-CLASS-73-336.5
			US-PATENT-APPL-SN-486470				US-PATENT-CLASS-523-135				US-PATENT-4,514,178
			US-PATENT-CLASS-136-225				US-PATENT-CLASS-524-388	N85-29213*	c 35		NASA-CASE-MSC-18866-1
			US-PATENT-CLASS-136-246				US-PATENT-CLASS-524-567				US-PATENT-APPL-SN-350471
			US-PATENT-CLASS-357-30				US-PATENT-4,518,722				US-PATENT-CLASS-422-103
			US-PATENT-4,482,778	N85-29082*	c 31		NASA-CASE-NPO-16257-1				US-PATENT-CLASS-422-86
N85-21769*	c 44		NAS 1.71:MFS-25637-1				US-PATENT-APPL-SN-588164				US-PATENT-CLASS-422-88
			NASA-CASE-MFS-25637-1				US-PATENT-CLASS-62-3				US-PATENT-CLASS-436-2
			US-PATENT-APPL-SN-375684				US-PATENT-4,507,928				US-PATENT-CLASS-73-40.7
			US-PATENT-CLASS-290-1R	N85-29083*	c 31		NASA-CASE-LAR-13181-1				US-PATENT-CLASS-73-863.86
			US-PATENT-CLASS-290-4R				US-PATENT-APPL-SN-507823				US-PATENT-CLASS-73-864.52
			US-PATENT-CLASS-307-64				US-PATENT-CLASS-156-272.4				US-PATENT-4,515,751
			US-PATENT-CLASS-307-66				US-PATENT-CLASS-156-273.9	N85-29214*	c 35		NASA-CASE-MSC-25707-1
			US-PATENT-CLASS-318-46				US-PATENT-CLASS-156-380.2				US-PATENT-APPL-SN-359627
			US-PATENT-CLASS-318-729				US-PATENT-CLASS-219-10.43				US-PATENT-CLASS-126-263
			US-PATENT-4,489,243				US-PATENT-CLASS-219-10.49				US-PATENT-CLASS-165-48R
N85-21846*	c 46		NAS 1.71:NPO-15430-1				US-PATENT-CLASS-219-10.53				US-PATENT-CLASS-165-61
			NASA-CASE-NPO-15430-1				US-PATENT-CLASS-219-10.77				US-PATENT-CLASS-165-64
			US-PATENT-APPL-SN-322317				US-PATENT-4,521,659				US-PATENT-CLASS-244-163
			US-PATENT-CLASS-343-352	N85-29117*	c 32		NASA-CASE-NPO-15432-1				US-PATENT-4,513,810
			US-PATENT-CLASS-343-460				US-PATENT-APPL-SN-425204	N85-29264*	c 36		NASA-CASE-NPO-16000-1

		US-PATENT-APPL-SN-384547			US-PATENT-APPL-SN-516217			US-PATENT-CLASS-148-33.2
		US-PATENT-CLASS-250-339			US-PATENT-APPL-SN-561434			US-PATENT-CLASS-156-DIG.65
		US-PATENT-CLASS-364-556			US-PATENT-CLASS-526-204			US-PATENT-CLASS-156-DIG.88
		US-PATENT-4,509,130			US-PATENT-CLASS-526-217			US-PATENT-CLASS-156-612
N85-29282*	c 37	NASA-CASE-NPO-15037-2			US-PATENT-CLASS-526-262			US-PATENT-CLASS-29-576E
		US-PATENT-APPL-SN-161257			US-PATENT-CLASS-526-314			US-PATENT-CLASS-29-576J
		US-PATENT-APPL-SN-431420			US-PATENT-CLASS-526-322			US-PATENT-CLASS-29-576W
		US-PATENT-CLASS-415-1			US-PATENT-4,495,339			US-PATENT-CLASS-29-578
		US-PATENT-CLASS-415-68	N85-30187*	c 33	NASA-CASE-NPO-16021-1			US-PATENT-CLASS-357-4
		US-PATENT-4,514,137			US-PATENT-APPL-SN-402205			US-PATENT-CLASS-357-50
N85-29283*	c 37	NASA-CASE-MSC-18852-1			US-PATENT-CLASS-324-158R			US-PATENT-4,522,661
		US-PATENT-APPL-SN-392094			US-PATENT-CLASS-324-65R	N85-30923*	c 76	NASA-CASE-LAR-12893-1
		US-PATENT-CLASS-239-DIG.23			US-PATENT-4,516,071			US-PATENT-APPL-SN-364041
		US-PATENT-CLASS-239-288	N85-30281*	c 35	NASA-CASE-GSC-12851-1			US-PATENT-CLASS-204-1T
		US-PATENT-CLASS-239-322			US-PATENT-APPL-SN-459842			US-PATENT-CLASS-324-158D
		US-PATENT-CLASS-239-327			US-PATENT-CLASS-250-363S			US-PATENT-CLASS-324-71.5
		US-PATENT-CLASS-239-375			US-PATENT-CLASS-250-369			US-PATENT-4,511,838
		US-PATENT-CLASS-239-590			US-PATENT-4,521,688	N85-30934* #	c 76	NAS 1.71:NPO-16306-1-CU
		US-PATENT-CLASS-55-DIG.42	N85-30282*	c 35	NASA-CASE-LAR-12966-1			NASA-CASE-NPO-16306-1-CU
		US-PATENT-4,519,545			US-PATENT-APPL-SN-414237			US-PATENT-APPL-SN-719788
N85-29284*	c 37	NASA-CASE-MSC-20148-1			US-PATENT-CLASS-356-351	N85-33187*	c 23	NASA-CASE-ARC-11243-2
		US-PATENT-APPL-SN-638465			US-PATENT-CLASS-356-358			US-PATENT-APPL-SN-183707
		US-PATENT-CLASS-251-325			US-PATENT-CLASS-373-657			US-PATENT-CLASS-549-335
		US-PATENT-CLASS-251-349			US-PATENT-4,512,681			US-PATENT-4,528,386
		US-PATENT-CLASS-251-353	N85-30305*	c 36	NASA-CASE-NPO-15980-1	N85-33433*	c 34	NASA-CASE-LEW-14039-1
		US-PATENT-CLASS-277-135			US-PATENT-APPL-SN-385220			US-PATENT-APPL-SN-580419
		US-PATENT-CLASS-277-80			US-PATENT-CLASS-357-17			US-PATENT-CLASS-415-115
		US-PATENT-4,523,741			US-PATENT-CLASS-357-40			US-PATENT-CLASS-416-97A
N85-29285*	c 37	NASA-CASE-LAR-13009-1			US-PATENT-CLASS-357-46			US-PATENT-4,529,358
		US-PATENT-APPL-SN-495380			US-PATENT-CLASS-372-38	N85-33489*	c 37	NASA-CASE-LEW-13914-1
		US-PATENT-CLASS-403-28			US-PATENT-CLASS-372-46			US-PATENT-APPL-SN-537615
		US-PATENT-CLASS-403-408			US-PATENT-CLASS-372-50			US-PATENT-CLASS-315-3.5
		US-PATENT-CLASS-411-368			US-PATENT-4,513,423			US-PATENT-CLASS-315-5.38
		US-PATENT-CLASS-411-378	N85-30333*	c 37	NASA-CASE-LEW-13717-1			US-PATENT-CLASS-445-35
		US-PATENT-CLASS-411-426			US-PATENT-APPL-SN-463456			US-PATENT-4,527,092
		US-PATENT-CLASS-411-501			US-PATENT-CLASS-310-77	N85-33490*	c 37	NASA-CASE-LEW-13506-1
		US-PATENT-CLASS-411-531			US-PATENT-CLASS-310-93			US-PATENT-APPL-SN-596960
		US-PATENT-4,512,689			US-PATENT-CLASS-318-611			US-PATENT-CLASS-384-101
N85-29286*	c 37	NASA-CASE-LAR-13040-1			US-PATENT-CLASS-335-100			US-PATENT-CLASS-384-99
		US-PATENT-APPL-SN-547176			US-PATENT-4,517,505			US-PATENT-4,527,910
		US-PATENT-CLASS-219-201	N85-30334*	c 37	NASA-CASE-MSC-20080-1	N85-33701*	c 60	NASA-CASE-MFS-25319-1
		US-PATENT-CLASS-219-221			US-PATENT-APPL-SN-393584			US-PATENT-APPL-SN-437917
		US-PATENT-CLASS-219-285			US-PATENT-CLASS-403-15			US-PATENT-CLASS-364-723
		US-PATENT-CLASS-414-217			US-PATENT-CLASS-403-16			US-PATENT-CLASS-364-853
		US-PATENT-CLASS-73-863.11			US-PATENT-CLASS-403-322			US-PATENT-4,528,639
		US-PATENT-CLASS-73-864.81			US-PATENT-CLASS-89-1.57	N85-33826*	c 76	NASA-CASE-MSC-20036-1
		US-PATENT-4,516,435			US-PATENT-4,512,678			US-PATENT-APPL-SN-569372
N85-29693*	c 71	NASA-CASE-NPO-16147-1-CU	N85-30335*	c 37	NASA-CASE-LAR-12738-2			US-PATENT-CLASS-204-192C
		US-PATENT-APPL-SN-559988			US-PATENT-APPL-SN-539230			US-PATENT-CLASS-204-192P
		US-PATENT-CLASS-73-505			US-PATENT-CLASS-244-158-A			US-PATENT-CLASS-350-342
		US-PATENT-4,520,656			US-PATENT-CLASS-411-103			US-PATENT-CLASS-428-432
N85-29749*	c 74	NASA-CASE-NPO-15464-1			US-PATENT-CLASS-411-108			US-PATENT-CLASS-428-698
		US-PATENT-APPL-SN-342828			US-PATENT-CLASS-52-127.7			US-PATENT-CLASS-428-913
		US-PATENT-CLASS-156-166			US-PATENT-CLASS-52-506			US-PATENT-4,522,489
		US-PATENT-CLASS-350-320			US-PATENT-CLASS-52-745	N85-34280*	c 27	NASA-CASE-ARC-11522-2
		US-PATENT-CLASS-350-96.15			US-PATENT-4,520,601			US-PATENT-APPL-SN-641143
		US-PATENT-4,523,810	N85-30336*	c 37	NASA-CASE-LAR-12864-1			US-PATENT-CLASS-528-168
N85-29750*	c 74	NASA-CASE-MSC-18417-1			US-PATENT-APPL-SN-387646			US-PATENT-CLASS-528-229
		US-PATENT-APPL-SN-523559			US-PATENT-CLASS-403-102			US-PATENT-CLASS-528-352
		US-PATENT-CLASS-350-312			US-PATENT-CLASS-403-322			US-PATENT-CLASS-528-353
		US-PATENT-CLASS-350-319			US-PATENT-CLASS-403-348			US-PATENT-4,536,565
		US-PATENT-CLASS-350-321			US-PATENT-4,518,277	N85-34281*	c 27	NASA-CASE-ARC-11424-1
		US-PATENT-CLASS-52-171			NASA-CASE-NPO-15419-2			US-PATENT-APPL-SN-598777
		US-PATENT-4,521,077	N85-30474*	c 44	US-PATENT-APPL-SN-259260			US-PATENT-CLASS-428-260
N85-29800*	c 76	NASA-CASE-NPO-15772-1			US-PATENT-APPL-SN-542557			US-PATENT-CLASS-428-408
		US-PATENT-APPL-SN-392944			US-PATENT-CLASS-126-DIG.1			US-PATENT-CLASS-428-413
		US-PATENT-CLASS-156-623Q			US-PATENT-CLASS-126-400			US-PATENT-CLASS-525-107
		US-PATENT-CLASS-23-295R			US-PATENT-CLASS-126-415			US-PATENT-CLASS-525-113
		US-PATENT-4,512,846			US-PATENT-CLASS-126-419			US-PATENT-CLASS-525-119
N85-29947*	c 05	NASA-CASE-ARC-11444-1			US-PATENT-CLASS-126-900			US-PATENT-CLASS-525-186
		US-PATENT-APPL-SN-489675			US-PATENT-4,512,332			US-PATENT-CLASS-525-229
		US-PATENT-CLASS-416-145	N85-30475*	c 44	NASA-CASE-NPO-16155-1			US-PATENT-CLASS-528-113
		US-PATENT-CLASS-416-23			US-PATENT-APPL-SN-578390			US-PATENT-CLASS-528-117
		US-PATENT-CLASS-416-500			US-PATENT-CLASS-136-255			US-PATENT-CLASS-528-407
		US-PATENT-4,514,143			US-PATENT-CLASS-136-256			US-PATENT-CLASS-528-94
N85-29991*	c 18	NASA-CASE-MFS-25837-1			US-PATENT-CLASS-136-261			US-PATENT-4,537,834
		US-PATENT-APPL-SN-401282			US-PATENT-CLASS-357-30	N85-34282*	c 27	NASA-CASE-LAR-13226-1
		US-PATENT-CLASS-244-118.1			US-PATENT-4,524,237			US-PATENT-APPL-SN-548583
		US-PATENT-CLASS-244-158R	N85-30618*	c 52	NASA-CASE-LAR-13028-1			US-PATENT-CLASS-523-454
		US-PATENT-CLASS-248-503			US-PATENT-APPL-SN-582492			US-PATENT-CLASS-523-458
		US-PATENT-CLASS-248-555			US-PATENT-CLASS-128-660			US-PATENT-CLASS-528-106
		US-PATENT-CLASS-403-143			US-PATENT-CLASS-128-736			US-PATENT-CLASS-528-229
		US-PATENT-CLASS-403-56			US-PATENT-CLASS-374-117			US-PATENT-CLASS-528-407
		US-PATENT-CLASS-403-76			US-PATENT-CLASS-374-160			US-PATENT-CLASS-528-92
		US-PATENT-CLASS-403-90			US-PATENT-4,513,750			US-PATENT-4,510,277
		US-PATENT-CLASS-410-79	N85-30765*	c 71	NASA-CASE-NPO-15559-1	N85-34327*	c 32	NASA-CASE-NPO-15704-1
		US-PATENT-CLASS-410-90			US-PATENT-APPL-SN-379601			US-PATENT-APPL-SN-359382
		US-PATENT-4,508,296			US-PATENT-CLASS-181-0.5			US-PATENT-CLASS-343-17.2-PC
N85-30027*	c 24	NASA-CASE-LEW-13828-1			US-PATENT-CLASS-209-422			US-PATENT-CLASS-343-5-CM
		US-PATENT-APPL-SN-560035			US-PATENT-CLASS-209-638			US-PATENT-CLASS-343-5-W
		US-PATENT-CLASS-219-76.14			US-PATENT-4,523,682			US-PATENT-4,509,048
		US-PATENT-CLASS-427-178	N85-30922*	c 76	NASA-CASE-NPO-15813-1	N85-34333*	c 33	NASA-CASE-NPO-15696-1
		US-PATENT-CLASS-427-37			US-PATENT-APPL-SN-507624			US-PATENT-APPL-SN-387647
		US-PATENT-CLASS-427-422			US-PATENT-CLASS-148-DIG.26			US-PATENT-CLASS-364-571
		US-PATENT-4,518,625			US-PATENT-CLASS-148-174			US-PATENT-CLASS-364-578
N85-30039*	c 25	NASA-CASE-LEW-13770-6			US-PATENT-CLASS-148-175			US-PATENT-CLASS-372-32

N85-34373*	c 35	US-PATENT-4,509,132 NAS 1.71:NPO-15493-2 NAS 1.71:NPO-15494-2 US-PATENT-APPL-SN-563890 US-PATENT-CLASS-324-65-P US-PATENT-CLASS-73-75 US-PATENT-4,532,797	N86-12547*	c 34	US-PATENT-CLASS-428-704 US-PATENT-4,535,035 NASA-CASE-LAR-13220-1 US-PATENT-APPL-SN-633179 US-PATENT-CLASS-73-3 US-PATENT-CLASS-73-861.07 US-PATENT-4,538,446	N86-19580*	c 35	US-PATENT-CLASS-357-23.6 US-PATENT-CLASS-357-30 US-PATENT-CLASS-357-58 US-PATENT-CLASS-357-59 US-PATENT-4,531,143 NASA-CASE-GSC-12795-1 US-PATENT-APPL-SN-462508 US-PATENT-CLASS-374-115 US-PATENT-CLASS-374-120 US-PATENT-CLASS-374-183 US-PATENT-4,556,327
N85-34374*	c 35	NASA-CASE-ARC-11503-1 US-PATENT-APPL-SN-582643 US-PATENT-CLASS-250-374 US-PATENT-CLASS-250-379 US-PATENT-4,538,066	N86-19304*	c 04	NASA-CASE-KSC-11155-1 US-PATENT-APPL-SN-425201 US-PATENT-CLASS-343-6.8-R US-PATENT-4,540,986	N86-19581*	c 35	NASA-CASE-MSC-20250-1 US-PATENT-APPL-SN-491113 US-PATENT-CLASS-73-862.01 US-PATENT-CLASS-73-862.54 US-PATENT-4,557,149
N85-34375*	c 35	NASA-CASE-LAR-13243-1 US-PATENT-APPL-SN-590823 US-PATENT-CLASS-73-831 US-PATENT-CLASS-73-856 US-PATENT-4,535,636	N86-19310*	c 05	NASA-CASE-LAR-13155-1 US-PATENT-APPL-SN-469371 US-PATENT-CLASS-244-158-A US-PATENT-CLASS-244-158-R US-PATENT-CLASS-244-172 US-PATENT-4,557,444	N86-19603*	c 37	NASA-CASE-MFS-25949-1 US-PATENT-APPL-SN-538063 US-PATENT-CLASS-414-730 US-PATENT-CLASS-901-31 US-PATENT-CLASS-901-50 US-PATENT-4,545,723
N85-34401*	c 37	NASA-CASE-MFS-25907-1 US-PATENT-APPL-SN-510137 US-PATENT-CLASS-244-118.1 US-PATENT-CLASS-244-158R US-PATENT-CLASS-248-550 US-PATENT-CLASS-267-150 US-PATENT-CLASS-267-8R US-PATENT-CLASS-410-156 US-PATENT-4,536,114	N86-19376*	c 23	NASA-CASE-ARC-11428-1 US-PATENT-APPL-SN-499126 US-PATENT-CLASS-260-927-N US-PATENT-CLASS-428-410 US-PATENT-CLASS-528-310 US-PATENT-CLASS-548-413 US-PATENT-CLASS-564-113 US-PATENT-4,550,177	N86-19604*	c 37	NASA-CASE-NPO-15960-1 US-PATENT-APPL-SN-527613 US-PATENT-CLASS-337-140 US-PATENT-CLASS-60-527 US-PATENT-CLASS-60-528 US-PATENT-4,553,393
N85-34403*	c 37	NASA-CASE-MSC-20127-2 US-PATENT-APPL-SN-646044 US-PATENT-CLASS-137-116.3 US-PATENT-CLASS-137-99 US-PATENT-4,509,548	N86-19380*	c 24	NASA-CASE-ARC-11427-1 US-PATENT-APPL-SN-493865 US-PATENT-CLASS-523-433 US-PATENT-CLASS-523-445 US-PATENT-CLASS-523-66468 US-PATENT-CLASS-525-423 US-PATENT-CLASS-525-527 US-PATENT-CLASS-528-102 US-PATENT-CLASS-528-103 US-PATENT-4,550,129	N86-19605*	c 37	NASA-CASE-NPO-16038-1 US-PATENT-APPL-SN-469864 US-PATENT-CLASS-16-294 US-PATENT-CLASS-403-113 US-PATENT-CLASS-403-120 US-PATENT-4,558,967
N85-34441*	c 44	NASA-CASE-LEW-14077-1 US-PATENT-APPL-SN-580573 US-PATENT-CLASS-136-253 US-PATENT-4,528,417	N86-19413*	c 25	NASA-CASE-MSC-20622-1 US-PATENT-APPL-SN-571616 US-PATENT-CLASS-374-46 US-PATENT-CLASS-374-8 US-PATENT-CLASS-422-78 US-PATENT-CLASS-436-155 US-PATENT-CLASS-73-7 US-PATENT-4,561,784	N86-19711*	c 43	NASA-CASE-NPO-15939-1 US-PATENT-APPL-SN-465365 US-PATENT-CLASS-343-5-CD US-PATENT-CLASS-343-5-CM US-PATENT-CLASS-343-5-VQ US-PATENT-CLASS-367-88 US-PATENT-4,551,724
N85-34629*	c 74	NASA-CASE-NPO-15865-1 US-PATENT-APPL-SN-425202 US-PATENT-CLASS-343-13-R US-PATENT-CLASS-356-5 US-PATENT-4,533,242	N86-19455*	c 27	NASA-CASE-ARC-11405-2 US-PATENT-APPL-SN-514117 US-PATENT-CLASS-260-245.75 US-PATENT-CLASS-260-245.9 US-PATENT-CLASS-528-327 US-PATENT-4,522,755	N86-19721*	c 44	NASA-CASE-LEW-14028-1 US-PATENT-APPL-SN-642310 US-PATENT-CLASS-429-109 US-PATENT-CLASS-429-15 US-PATENT-CLASS-429-19 US-PATENT-CLASS-429-51 US-PATENT-4,543,302
N85-34722*	c 85	NASA-CASE-NPO-15948-1 US-PATENT-APPL-SN-457990 US-PATENT-CLASS-414-288 US-PATENT-CLASS-414-328 US-PATENT-CLASS-414-373 US-PATENT-CLASS-414-786 US-PATENT-4,537,554	N86-19456*	c 27	NASA-CASE-LAR-13135-1 US-PATENT-APPL-SN-649328 US-PATENT-CLASS-525-432 US-PATENT-CLASS-525-436 US-PATENT-CLASS-528-179 US-PATENT-CLASS-528-182 US-PATENT-CLASS-528-185 US-PATENT-CLASS-528-352 US-PATENT-CLASS-528-353 US-PATENT-4,552,931	N86-19885* #	c 52	NAS 1.71:GSC-12944-1 NASA-CASE-GSC-12944-1 US-PATENT-APPL-SN-793006 NASA-CASE-MFS-25942-1 US-PATENT-APPL-SN-571613 US-PATENT-CLASS-378-43 US-PATENT-CLASS-378-85 US-PATENT-4,562,583
N85-35194*	c 07	NASA-CASE-LAR-13019-1 US-PATENT-APPL-SN-576308 US-PATENT-CLASS-244-199 US-PATENT-CLASS-244-55 US-PATENT-4,533,101	N86-19457*	c 27	NASA-CASE-LEW-13864-1 US-PATENT-APPL-SN-434087 US-PATENT-CLASS-528-229 US-PATENT-CLASS-528-322 US-PATENT-CLASS-528-342 US-PATENT-CLASS-528-345 US-PATENT-4,560,742	N86-20124*	c 74	NASA-CASE-ARC-11502-1 US-PATENT-APPL-SN-594134 US-PATENT-CLASS-350-276-R US-PATENT-CLASS-350-319 US-PATENT-CLASS-350-448 US-PATENT-CLASS-350-537 US-PATENT-CLASS-350-580 US-PATENT-4,542,963
N85-35195*	c 07	NASA-CASE-LEW-13562-2 US-PATENT-APPL-SN-500651 US-PATENT-CLASS-239-402.5 US-PATENT-CLASS-60-39.23 US-PATENT-CLASS-60-748 US-PATENT-4,534,166	N86-19458*	c 27	NASA-CASE-LEW-14072-1 US-PATENT-APPL-SN-649330 US-PATENT-CLASS-204-192-C US-PATENT-CLASS-204-192-D US-PATENT-CLASS-204-192-R US-PATENT-CLASS-204-298 US-PATENT-CLASS-427-248.1 US-PATENT-CLASS-427-38 US-PATENT-CLASS-428-446 US-PATENT-CLASS-428-473.5 US-PATENT-CLASS-428-702 US-PATENT-4,560,577	N86-20125*	c 74	NASA-CASE-ARC-11502-1 US-PATENT-APPL-SN-594134 US-PATENT-CLASS-350-276-R US-PATENT-CLASS-350-319 US-PATENT-CLASS-350-448 US-PATENT-CLASS-350-537 US-PATENT-CLASS-350-580 US-PATENT-4,542,963
N85-35200*	c 08	NASA-CASE-LAR-13076-1 US-PATENT-APPL-SN-532342 US-PATENT-CLASS-244-113 US-PATENT-CLASS-244-139 US-PATENT-CLASS-244-75-R US-PATENT-4,538,778	N86-19479*	c 31	NASA-CASE-LAR-13098-1 US-PATENT-APPL-SN-530339 US-PATENT-CLASS-16-242 US-PATENT-CLASS-16-390 US-PATENT-CLASS-403-171 US-PATENT-CLASS-403-64 US-PATENT-CLASS-52-632 US-PATENT-CLASS-52-637 US-PATENT-CLASS-52-646 US-PATENT-CLASS-52-648 US-PATENT-4,557,097	N86-20126*	c 74	NASA-CASE-MSC-20418-1 US-PATENT-APPL-SN-438446 US-PATENT-CLASS-378-58 US-PATENT-CLASS-378-59 US-PATENT-4,542,520
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		US-PATENT-CLASS-156-286			US-PATENT-CLASS-455-65	US-PATENT-CLASS-558-145
		US-PATENT-CLASS-156-289	N87-25531*	c 33	US-PATENT-4,675,880	US-PATENT-CLASS-558-190
		US-PATENT-CLASS-156-298			NASA-CASE-MSC-20187-1	US-PATENT-CLASS-558-193
		US-PATENT-CLASS-156-307.1			US-PATENT-APPL-SN-649327	US-PATENT-4,689,421
		US-PATENT-CLASS-156-307.3			US-PATENT-CLASS-371-43	N87-28647* c 26 NASA-CASE-LEW-14262-1
		US-PATENT-CLASS-156-307.7			US-PATENT-CLASS-375-120	US-PATENT-APPL-SN-832296
		US-PATENT-CLASS-156-87			US-PATENT-CLASS-375-54	US-PATENT-CLASS-148-162
		US-PATENT-4,676,853			US-PATENT-CLASS-375-59	US-PATENT-CLASS-148-410
N87-23982*	c 37	NASA-CASE-LAR-13100-1			US-PATENT-CLASS-375-76	US-PATENT-4,676,846
		US-PATENT-APPL-SN-831377	N87-25555* #	c 35	US-PATENT-4,682,343	N87-28656* c 27 NASA-CASE-LEW-14392-1
		US-PATENT-CLASS-250-238			NASA-CASE-MSC-21166-1	US-PATENT-APPL-SN-886149
		US-PATENT-CLASS-250-352			US-PATENT-APPL-SN-032885	US-PATENT-CLASS-264-332
		US-PATENT-CLASS-62-514-R	N87-25558* #	c 35	NASA-CASE-LAR-13564-1	US-PATENT-CLASS-264-60
		US-PATENT-4,672,202			US-PATENT-APPL-SN-044180	US-PATENT-CLASS-264-63
N87-23983*	c 37	NASA-CASE-LAR-13198-1	N87-25561* #	c 35	NASA-CASE-LAR-13680-1	US-PATENT-CLASS-428-367
		US-PATENT-APPL-SN-729704			US-PATENT-APPL-SN-052941	US-PATENT-4,689,188
		US-PATENT-CLASS-60-634	N87-25567* #	c 36	NASA-CASE-NPO-16497-1-CU	N87-28657* c 27 NASA-CASE-LAR-13450-1
		US-PATENT-CLASS-60-638			US-PATENT-APPL-SN-783887	US-PATENT-APPL-SN-840816
		US-PATENT-CLASS-89-1.14			US-PATENT-CLASS-307-425	US-PATENT-CLASS-428-290
		US-PATENT-4,669,354			US-PATENT-CLASS-372-20	US-PATENT-CLASS-525-426
N87-24564*	c 27	NASA-CASE-ARC-11533-3			US-PATENT-CLASS-372-4	US-PATENT-CLASS-525-432
		US-PATENT-APPL-SN-852467			US-PATENT-CLASS-372-69	US-PATENT-CLASS-525-436
		US-PATENT-CLASS-528-413			US-PATENT-CLASS-372-99	US-PATENT-CLASS-525-903
		US-PATENT-4,675,379			US-PATENT-4,682,053	US-PATENT-4,695,610
N87-24575* #	c 27	NAS 1.71:LAR-13633-1	N87-25573* #	c 37	NASA-CASE-ARC-11620-1	N87-28831* c 33 NASA-CASE-LAR-13407-1
		NASA-CASE-LAR-13633-1			US-PATENT-APPL-SN-795945	US-PATENT-APPL-SN-804196
		US-PATENT-APPL-SN-011693			US-PATENT-CLASS-137-614.11	US-PATENT-CLASS-313-505
N87-24689*	c 37	NASA-CASE-MFS-28110-1			US-PATENT-CLASS-137-614.18	US-PATENT-CLASS-313-506
		US-PATENT-APPL-SN-852466			US-PATENT-CLASS-251-129.15	US-PATENT-CLASS-313-509
		US-PATENT-CLASS-239-433			US-PATENT-CLASS-251-175	US-PATENT-4,689,522
		US-PATENT-CLASS-239-596			US-PATENT-4,681,142	N87-28832* c 33 NASA-CASE-LEW-14108-1
		US-PATENT-CLASS-239-600			NASA-CASE-MSC-20910-1	US-PATENT-APPL-SN-732321
		US-PATENT-4,666,086	N87-25582* #	c 37	US-PATENT-APPL-SN-783888	US-PATENT-CLASS-313-237
N87-24874*	c 52	NASA-CASE-MFS-26011-1-SB			US-PATENT-CLASS-244-161	US-PATENT-CLASS-313-278
		US-PATENT-APPL-SN-655605			US-PATENT-CLASS-292-DIG.49	US-PATENT-4,687,964
		US-PATENT-CLASS-351-206			US-PATENT-CLASS-292-201	N87-28833* c 33 NASA-CASE-ARC-11613-1
		US-PATENT-CLASS-351-208			US-PATENT-CLASS-292-64	US-PATENT-APPL-SN-739792
		US-PATENT-CLASS-354-62			US-PATENT-4,682,745	US-PATENT-CLASS-244-134-D
		US-PATENT-4,669,836	N87-25585* #	c 37	NASA-CASE-LEW-14196-2	US-PATENT-CLASS-318-116
N87-25334*	c 09	NASA-CASE-LAR-13522-1-SB			US-PATENT-APPL-SN-054983	US-PATENT-4,690,353
		US-PATENT-APPL-SN-890575	N87-25601* #	c 39	NASA-CASE-MFS-28118-1	N87-28867* c 34 NASA-CASE-MSC-20946-1
		US-PATENT-CLASS-73-147			US-PATENT-APPL-SN-886121	US-PATENT-APPL-SN-875799
		US-PATENT-CLASS-73-856			US-PATENT-CLASS-73-809	US-PATENT-CASE-165-1
		US-PATENT-4,682,494			US-PATENT-CLASS-73-810	US-PATENT-CASE-165-104.25
N87-25344*	c 14	NASA-CASE-ARC-11646-1			US-PATENT-4,676,110	US-PATENT-CASE-165-104.26
		US-PATENT-APPL-SN-924398	N87-25803* #	c 62	NASA-CASE-NPO-17058-1-CU	US-PATENT-CASE-165-13
		US-PATENT-CLASS-434-34			US-PATENT-APPL-SN-060201	US-PATENT-CASE-165-32
		US-PATENT-4,678,438	N87-25843* #	c 74	NASA-CASE-MFS-29207-1	US-PATENT-CASE-165-41
N87-25348*	c 17	NASA-CASE-MSC-20821-1			US-PATENT-APPL-SN-713449	US-PATENT-4,687,048
		US-PATENT-APPL-SN-775990			US-PATENT-APPL-SN-783890	N87-28884* c 35 NASA-CASE-LAR-13512-1
		US-PATENT-CLASS-358-105			US-PATENT-CLASS-219-124.34	US-PATENT-APPL-SN-901113
		US-PATENT-CLASS-358-133			US-PATENT-CLASS-219-130.01	US-PATENT-CLASS-285-137.1
		US-PATENT-CLASS-358-138			US-PATENT-CLASS-219-74	US-PATENT-CLASS-285-901
		US-PATENT-4,682,225			US-PATENT-4,633,060	US-PATENT-CLASS-73-147
N87-25455*	c 26	NASA-CASE-LAR-13474-1-SB			US-PATENT-4,682,006	US-PATENT-CLASS-73-756
		US-PATENT-APPL-SN-840900	N87-25882* #	c 76	NASA-CASE-MFS-28060-1	US-PATENT-4,688,422
		US-PATENT-CLASS-148-6.3			US-PATENT-APPL-SN-706565	N87-29118* c 54 NASA-CASE-LAR-13393-1
		US-PATENT-CLASS-204-192.15			US-PATENT-CLASS-356-128	US-PATENT-APPL-SN-760799
		US-PATENT-CLASS-204-192.23			US-PATENT-CLASS-356-129	US-PATENT-CLASS-182-223
		US-PATENT-CLASS-428-607			US-PATENT-4,681,437	US-PATENT-CLASS-182-63
		US-PATENT-CLASS-428-632	N87-25868* #	c 76	NASA-CASE-NPO-16808-1-CU	US-PATENT-CLASS-182-82
		US-PATENT-CLASS-428-651			US-PATENT-APPL-SN-027981	US-PATENT-4,685,535
		US-PATENT-CLASS-428-660	N87-27713* #	c 18	NASA-CASE-LAR-13489-1	N87-29360* c 76 NASA-CASE-LAR-13476-1-CU
		US-PATENT-4,681-818			US-PATENT-APPL-SN-890445	US-PATENT-APPL-SN-933961
N87-25469*	c 27	NASA-CASE-ARC-11548-1			US-PATENT-CLASS-285-27	US-PATENT-CLASS-423-338
		US-PATENT-APPL-SN-806572			US-PATENT-CLASS-285-31	US-PATENT-CLASS-423-339
		US-PATENT-CLASS-428-413			US-PATENT-CLASS-285-373	US-PATENT-4,696,808
		US-PATENT-CLASS-428-417			US-PATENT-CLASS-285-421	N87-29372* c 82 NASA-CASE-LAR-13306-1
		US-PATENT-CLASS-528-108			US-PATENT-CLASS-285-86	US-PATENT-APPL-SN-846430
		US-PATENT-CLASS-528-168			US-PATENT-CLASS-403-341	US-PATENT-CLASS-340-407
		US-PATENT-4,668,589			US-PATENT-4,684,156	US-PATENT-CLASS-434-114
N87-25474* #	c 27	NASA-CASE-LAR-13732-1	N87-27742* #	c 24	NASA-CASE-LAR-13150-1	US-PATENT-4,687,444
		US-PATENT-APPL-SN-035430			US-PATENT-APPL-SN-729767	N87-29586* # c 18 NAS 1.71:LAR-13738-1
N87-25489* #	c 29	NASA-CASE-NPO-17022-1-CU			US-PATENT-CLASS-29-156.5-R	NASA-CASE-LAR-13738-1
		US-PATENT-APPL-SN-066450			US-PATENT-CLASS-92-208	US-PATENT-APPL-SN-073539
N87-25491*	c 31	NASA-CASE-MFS-28044-1			US-PATENT-4,683,809	N87-29650* # c 26 NAS 1.71:LAR-13632-1
		US-PATENT-APPL-SN-804039			NASA-CASE-NPO-16567-1-CU	NASA-CASE-LAR-13632-1
		US-PATENT-CLASS-408-1-R	N87-28006* #	c 36	US-PATENT-APPL-SN-760790	US-PATENT-APPL-SN-079316
		US-PATENT-CLASS-51-281-R			US-PATENT-CLASS-250-339	N87-29672* # c 27 NAS 1.71:MSC-21082-1
		US-PATENT-4,680,897			US-PATENT-CLASS-250-343	NASA-CASE-MSC-21082-1
N87-25492*	c 31	NASA-CASE-LAR-13113-1			US-PATENT-CLASS-250-373	US-PATENT-APPL-SN-079320
		US-PATENT-APPL-SN-831371			US-PATENT-CLASS-356-256	N88-14071* c 02 NASA-CASE-LAR-13286-1
		US-PATENT-CLASS-182-152			US-PATENT-CLASS-356-409	US-PATENT-APPL-SN-686959
		US-PATENT-CLASS-52-108			US-PATENT-CLASS-356-51	US-PATENT-CLASS-114-67R
		US-PATENT-CLASS-52-632			US-PATENT-4,684,258	US-PATENT-CLASS-138-38
		US-PATENT-CLASS-52-646	N87-28416* #	c 74	NASA-CASE-ARC-11611-1	US-PATENT-CLASS-244-130
		US-PATENT-4,677,803			US-PATENT-APPL-SN-765981	US-PATENT-CLASS-244-199

N88-14083*	c 03	US-PATENT-CLASS-244-200	US-PATENT-CLASS-244-158-A	N88-23958*	c 34	NASA-CASE-NPO-17291-1-CU
		US-PATENT-CLASS-296-1S	US-PATENT-CLASS-428-44			NASA-CASE-MSC-20841-2
		US-PATENT-4,708,910	US-PATENT-CLASS-428-74			US-PATENT-APPL-SN-032679
N88-14083*	c 03	NASA-CASE-LAR-13470-1	US-PATENT-CLASS-428-76	N88-18725*	c 27	US-PATENT-APPL-SN-755288
		US-PATENT-APPL-SN-855983	US-PATENT-CLASS-428-920			US-PATENT-CLASS-126-423
		US-PATENT-CLASS-361-218	US-PATENT-4,713,275			US-PATENT-CLASS-165-1
N88-14179*	c 26	US-PATENT-CLASS-361-222	NAS 1.71:1AR-13447-1	N88-23759*	c 02	US-PATENT-CLASS-165-104.14
		US-PATENT-4,698,723	NASA-CASE-LAR-13447-1			US-PATENT-CLASS-165-13
		NASA-CASE-LEW-14104-2	US-PATENT-APPL-SN-855879			US-PATENT-CLASS-165-41
N88-14223*	c 31	US-PATENT-APPL-SN-661481	US-PATENT-CLASS-525-397	N88-23959* #	c 35	US-PATENT-4,664,177
		US-PATENT-APPL-SN-823713	US-PATENT-CLASS-525-905			US-PATENT-4,750,543
		US-PATENT-CLASS-148-16.6	US-PATENT-4,711,932			NAS 1.71:MFS-28287-1
N88-14270*	c 33	US-PATENT-CLASS-204-192.31	NASA-CASE-LAR-13436-1-CU	N88-23962* #	c 35	NASA-CASE-MFS-28287-1
		US-PATENT-CLASS-427-38	US-PATENT-APPL-SN-003676			US-PATENT-APPL-SN-122740
		US-PATENT-4,704,168	US-PATENT-CLASS-73-147			NAS 1.71:1AR-13508-1
N88-14271*	c 33	NASA-CASE-NPO-16734-1-CU	US-PATENT-CLASS-73-178-R	N88-23963* #	c 35	NASA-CASE-LAR-13508-1
		US-PATENT-APPL-SN-855982	US-PATENT-4,727,751			US-PATENT-APPL-SN-146939
		US-PATENT-CLASS-62-467	NASA-CASE-LAR-13511-1	N88-23966* #	c 35	NAS 1.71:1AR-13519-1
N88-14270*	c 33	US-PATENT-CLASS-62-48	US-PATENT-APPL-SN-013801			NASA-CASE-LAR-13519-1
		US-PATENT-4,697,425	US-PATENT-CLASS-244-119			US-PATENT-APPL-SN-146938
		NASA-CASE-NPO-16764-1-CU	US-PATENT-CLASS-244-120	N88-23973* #	c 37	NASA-CASE-MSC-20467-1
N88-14350*	c 36	US-PATENT-APPL-SN-904513	US-PATENT-CLASS-244-130			US-PATENT-APPL-SN-874319
		US-PATENT-CLASS-439-271	US-PATENT-CLASS-244-15			US-PATENT-CLASS-73-587
		US-PATENT-CLASS-439-578	US-PATENT-4,735,381	N88-23974* #	c 37	US-PATENT-CLASS-73-801
N88-14359*	c 37	US-PATENT-4,698,028	NASA-CASE-GSC-12970-1			US-PATENT-4,738,137
		NASA-CASE-GSC-12782-1	US-PATENT-APPL-SN-795805			NASA-CASE-LAR-13458-1
		US-PATENT-APPL-SN-399074	US-PATENT-CLASS-244-165	N88-23978* #	c 37	US-PATENT-APPL-SN-013802
N88-14359*	c 37	US-PATENT-CLASS-357-231	US-PATENT-4,732,353			US-PATENT-CLASS-73-794
		US-PATENT-CLASS-357-24	NASA-CASE-LAR-13630-1			US-PATENT-CLASS-73-810
		US-PATENT-CLASS-357-30	US-PATENT-APPL-SN-008895	N88-23978*	c 37	US-PATENT-4,718,281
N88-14359*	c 37	US-PATENT-CLASS-357-56	US-PATENT-CLASS-244-17.19			NAS 1.71:MSC-21171-1
		US-PATENT-CLASS-357-61	US-PATENT-CLASS-244-91			NASA-CASE-MSC-21171-1
		US-PATENT-CLASS-357-65	US-PATENT-4,708,305	N88-23979*	c 37	US-PATENT-APPL-SN-135120
N88-14359*	c 37	US-PATENT-4,709,252	NASA-CASE-MSC-21056-1			NAS 1.71:MFS-28273-1
		NASA-CASE-ARC-11634-1	US-PATENT-APPL-SN-934397			NASA-CASE-MFS-28273-1
N88-14359*	c 37	US-PATENT-APPL-SN-846427	US-PATENT-CLASS-16-292	N88-23979*	c 37	US-PATENT-APPL-SN-149830
		US-PATENT-CLASS-350-163	US-PATENT-CLASS-16-297			NASA-CASE-LEW-14212-1
		US-PATENT-CLASS-350-174	US-PATENT-CLASS-16-326			US-PATENT-APPL-SN-875798
N88-14359*	c 37	US-PATENT-CLASS-350-572	US-PATENT-CLASS-16-332	N88-23980*	c 37	US-PATENT-CLASS-415-136
		US-PATENT-CLASS-350-573	US-PATENT-CLASS-16-345			US-PATENT-CLASS-415-170-R
		US-PATENT-CLASS-356-28.5	US-PATENT-CLASS-16-347			US-PATENT-4,728,257
N88-14359*	c 37	US-PATENT-4,697,922	US-PATENT-CLASS-16-349	N88-23981*	c 37	NASA-CASE-MFS-28185-1
		NASA-CASE-LAR-13662-1	US-PATENT-4,736,490			US-PATENT-APPL-SN-056930
		US-PATENT-APPL-SN-790597	NASA-CASE-LAR-13411-1-SB			US-PATENT-CLASS-294-106
N88-14360*	c 37	US-PATENT-APPL-SN-904812	US-PATENT-APPL-SN-913432	N88-23982*	c 37	US-PATENT-CLASS-294-113
		US-PATENT-CLASS-228-107	US-PATENT-CLASS-180-8.8			US-PATENT-CLASS-294-119.2
		US-PATENT-CLASS-228-109	US-PATENT-CLASS-414-735			US-PATENT-CLASS-294-16
N88-14360*	c 37	US-PATENT-CLASS-228-2.5	US-PATENT-CLASS-414-750	N88-23982*	c 37	US-PATENT-4,723,800
		US-PATENT-4,708,280	US-PATENT-CLASS-901-1			NASA-CASE-MFS-29252-1
		NASA-CASE-MFS-28001-2	US-PATENT-CLASS-901-33			US-PATENT-APPL-SN-044181
N88-14360*	c 37	US-PATENT-APPL-SN-025039	US-PATENT-4,738,583	N88-23984*	c 25	US-PATENT-CLASS-219-137.42
		US-PATENT-APPL-SN-739788	NASA-CASE-MFS-28142-1			US-PATENT-CLASS-219-75
		US-PATENT-CLASS-269-43	US-PATENT-APPL-SN-904128	N88-23984*	c 25	US-PATENT-4,749,839
N88-14361*	c 37	US-PATENT-CLASS-269-71	US-PATENT-CLASS-204-180.1			NASA-CASE-LAR-13435-1
		US-PATENT-CLASS-269-73	US-PATENT-CLASS-204-299-R			US-PATENT-APPL-SN-890683
		US-PATENT-4,708,330	US-PATENT-4,752,372	N88-23984*	c 25	US-PATENT-CLASS-123-183-P
N88-14361*	c 37	NASA-CASE-LAR-13453-1	NASA-CASE-NPO-15609-2			US-PATENT-CLASS-92-176
		US-PATENT-APPL-SN-010950	US-PATENT-APPL-SN-511363			US-PATENT-CLASS-92-212
		US-PATENT-CLASS-33-147D	US-PATENT-APPL-SN-761310	N88-23984*	c 27	US-PATENT-CLASS-92-214
N88-14362*	c 37	US-PATENT-CLASS-73-834	US-PATENT-CLASS-159-3			US-PATENT-CLASS-92-222
		US-PATENT-4,706,387	US-PATENT-CLASS-159-48.2			US-PATENT-CLASS-92-224
		NASA-CASE-MFS-29177-1	US-PATENT-CLASS-159-900	N88-23984*	c 27	US-PATENT-4,736,676
N88-14362*	c 37	US-PATENT-APPL-SN-010942	US-PATENT-CLASS-203-90			NASA-CASE-LAR-12801-1
		US-PATENT-CLASS-219-124.34	US-PATENT-CLASS-203-91			US-PATENT-APPL-SN-309291
N88-14362*	c 37	US-PATENT-CLASS-219-130.01	US-PATENT-CLASS-203-98	N88-23984*	c 27	US-PATENT-CLASS-188-373
		US-PATENT-CLASS-219-136	US-PATENT-4,666,561			US-PATENT-CLASS-248-548
		US-PATENT-4,698,484	NASA-CASE-GSC-13008-1			US-PATENT-CLASS-248-608
N88-14492*	c 44	US-PATENT-CLASS-219-136	US-PATENT-APPL-SN-867987	N88-23984*	c 27	US-PATENT-CLASS-297-216
		US-PATENT-4,698,484	US-PATENT-CLASS-264-DIG.64			US-PATENT-4,720,139
		NASA-CASE-ARC-11622-1	US-PATENT-CLASS-264-50	N88-24163*	c 54	NASA-CASE-MFS-26009-1-SB
N88-14835*	c 76	US-PATENT-APPL-SN-823712	US-PATENT-CLASS-425-4-R			US-PATENT-APPL-SN-805011
		US-PATENT-CLASS-126-425	US-PATENT-4,731,211			US-PATENT-CLASS-108-3
		US-PATENT-CLASS-250-203R	NAS 1.71:NPO-17334-1-CU	N88-23917* #	c 31	US-PATENT-CLASS-108-7
N88-14835*	c 76	US-PATENT-4,710,618	NASA-CASE-NPO-17334-1-CU			US-PATENT-CLASS-312-196
		NASA-CASE-MFS-26008-1-CU	US-PATENT-APPL-SN-149821			US-PATENT-CLASS-312-208
N88-14835*	c 76	US-PATENT-APPL-SN-900194	NASA-CASE-MSC-20181-1	N88-23941*	c 33	US-PATENT-CLASS-312-300
		US-PATENT-CLASS-156-621	US-PATENT-APPL-SN-392093			US-PATENT-CLASS-312-7.2
		US-PATENT-CLASS-156-622	US-PATENT-CLASS-174-52-PE	N88-24169*	c 60	US-PATENT-4,725,106
N88-14836*	c 76	US-PATENT-CLASS-156-624	US-PATENT-CLASS-174-52-R			NASA-CASE-NPO-16462-1-CU
		US-PATENT-CLASS-422-251	US-PATENT-CLASS-174-52-S			US-PATENT-APPL-SN-815106
		US-PATENT-CLASS-422-260	US-PATENT-CLASS-357-72	N88-24241*	c 71	US-PATENT-CLASS-364-728
N88-14836*	c 76	US-PATENT-4,711,697	US-PATENT-CLASS-357-74			US-PATENT-CLASS-364-757
		NASA-CASE-NPO-16607-1-CU	US-PATENT-CLASS-357-81			US-PATENT-CLASS-382-42
N88-14836*	c 76	US-PATENT-APPL-SN-901114	US-PATENT-CLASS-525-425	N88-24253*	c 72	US-PATENT-4,750,144
		US-PATENT-CLASS-357-30	US-PATENT-4,750,031			NASA-CASE-NPO-16675-1-CU
		US-PATENT-CLASS-437-128	NASA-CASE-LAR-13202-1			US-PATENT-APPL-SN-827537
N88-148628*	c 24	US-PATENT-CLASS-437-131	US-PATENT-APPL-SN-879758	N88-23942*	c 33	US-PATENT-APPL-SN-789266
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Inquiries concerning the NASA Patent Licensing Program or the availability of licenses for the commercial use of NASA-owned inventions covered by U.S. patents or pending applications for patent should be forwarded to the NASA Patent Counsel of the NASA installation having cognizance of the specific invention, or the Associate General Counsel for Intellectual Property, code GP, National Aeronautics and Space Administration, Washington, D.C. 20546. Inquiries should refer to the NASA Case Number, the Title of the Invention, and the U.S. Patent Number or the U.S. Application Serial Number assigned to the invention as shown in *NASA PAB*.

The NASA Patent Counsel having cognizance of the invention is determined by the first three letters or prefix of the NASA Case Number assigned to the invention. The addresses of NASA Patent Counsels are listed alongside the NASA Case Number prefix letters in the following table.

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**NASA Case  
Number  
Prefix Letters**

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# PATENT LICENSING REGULATIONS

## NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

### 14 CFR Part 1245

#### Licensing of NASA Inventions

**AGENCY:** National Aeronautics and Space Administration

**ACTION:** Interim regulation with comments requested.

**SUMMARY:** The National Aeronautics and Space Administration (NASA) is revising its patent licensing regulations to conform with Pub. L. 96-517. This interim regulation provides policies and procedures applicable to the licensing of federally owned inventions in the custody of the National Aeronautics and Space Administration, and implements Pub. L. 96-517. The object of this subpart is to use the patent system to promote the utilization of inventions arising from NASA supported research and development.

**EFFECTIVE DATE:** July 1, 1981. Comments must be received in writing by December 2, 1981. Unless a notice is published in the **Federal Register** after the comment period indicating changes to be made, this interim regulation shall become a final regulation.

**ADDRESS:** Mr. John G. Mannix, Director of Patent Licensing, GP-4, NASA, Washington, D.C. 20546

#### FOR FURTHER INFORMATION CONTACT:

Mr. John G. Mannix, (202) 755-3954.

#### SUPPLEMENTARY INFORMATION:

### PART 1245—PATENTS AND OTHER INTELLECTUAL PROPERTY RIGHTS

Subpart 2 of Part 1245 is revised to read as follows:

\* \* \*

#### Subpart 2—Licensing of NASA Inventions

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1245.213 Transfer of custody.

1245.214 Confidentiality of information.

**Authority:** 35 U.S.C. Section 207 and 208.94 Stat 3023 and 3024.

\* \* \*

#### Subpart 2—Licensing of NASA Inventions

##### § 1245.200 Scope of subpart.

This subpart prescribes the terms, conditions and procedures upon which a NASA invention may be licensed. It does not affect licenses which (a) were in effect prior to July 1, 1981; (b) may exist at the time of the Government's acquisition of title to the invention, including those resulting from the allocation of rights to inventions made under Government research and development contracts; (c) are the result of an authorized exchange of rights in the settlement of patent disputes; or (d) are otherwise authorized by law or treaty.

##### § 1245.201 Policy and objective.

It is the policy and objective of this subpart to use the patent system to promote the utilization of inventions arising from NASA supported research and development.

##### § 1245.202 Definitions

(a) "Federally owned invention" means an invention, plant, or design which is covered by a patent, or patent application in the United States, or a patent, patent application, plant variety protection, or other form of protection, in a foreign country, title to which has been assigned to or otherwise vested in the United States Government.

(b) "Federal agency" means an executive department, military department, Government corporation, or independent establishment, except the Tennessee Valley Authority, which has custody of a Federally owned invention.

(c) "NASA Invention" means a Federally owned invention with respect to which NASA maintains custody and administration, in whole or in part, of the right, title or interest in such invention on behalf of the United States Government.

(d) "Small business firm" means a small business concern as defined at section 2 of Pub. L. 85-536 (15 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration. For the purpose of these regulations, the size standard for small business concerns involved in Government procurement, contained in 13 CFR 121.3-8, and in subcontracting, contained in 13 CFR 121.3-12, will be used.

(e) "Practical application" means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to operate in the case of a machine or system; and, in each case, under such condition, as to establish that the invention is being utilized and that its benefits are to the extent permitted by law or Government regulations available to the public on reasonable terms.

(f) "United States" means the United States of America, its territories and possessions, the District of Columbia, and the Commonwealth of Puerto Rico.

##### § 1245.203 Authority to grant licenses.

NASA inventions shall be made available for licensing as deemed appropriate in the public interest. NASA may grant nonexclusive, partially exclusive, or exclusive licenses thereto under this subpart on inventions in its custody.

#### Restrictions and Conditions

##### § 1245.204 All licenses granted under this subpart.

(a) *Restrictions.* (1) A license may be granted only if the applicant has supplied NASA with a satisfactory plan for development or marketing of the invention, or both, and with information about the applicant's capability to fulfill the plan.

(2) A license granting rights to use or sell under a NASA invention in the United States shall normally be granted only to a licensee who agrees that any products embodying the invention or produced through the use of the invention will be manufactured substantially in the United States.

(b) *Conditions.* Licenses shall contain such terms and conditions as NASA determines are appropriate for the protection of the interests of the Federal Government and the public and are not in conflict with law or this subpart. The following terms and conditions apply to any license:

(1) The duration of the license shall be for a period specified in the license agreement, unless sooner terminated in accordance with this subpart.

(2) The license may be granted for all or less than all fields of use of the invention or in specified geographical areas, or both.

(3) The license may extend to subsidiaries of the licensee or other parties if provided for in the license but shall be nonassignable without approval of NASA, except to the successor of that part of the licensee's business to which the invention pertains.

(4) The license may provide the licensee the right to grant sublicenses under the license, subject to the approval of NASA. Each sublicense shall make reference to the license, including the rights retained by the Government, and a copy of such sublicense shall be furnished to NASA.

(5) The license shall require the licensee to carry out the plan for development or marketing of the invention, or both, to bring the invention to practical application within a period specified in the license, and to continue to make the benefits of the invention reasonably accessible to the public.

## PATENT LICENSING REGULATIONS

(6) The license shall require the licensee to report periodically on the utilization or efforts at obtaining utilization that are being made by the licensee, with particular reference to the plan submitted.

(7) All licenses shall normally require royalties or other consideration.

(8) Where an agreement is obtained pursuant to § 1245.204(a)(2) that any products embodying the invention or produced through use of the invention will be manufactured substantially in the United States, the license shall recite such agreement.

(9) The license shall provide for the right of NASA to terminate the license, in whole or in part, if:

(i) NASA determines that the licensee is not executing the plan submitted with its request for a license and the licensee cannot otherwise demonstrate to the satisfaction of NASA that it has taken or can be expected to take within a reasonable time effective steps to achieve practical application of the invention;

(ii) NASA determines that such action is necessary to meet requirements for public use specified by Federal regulations issued after the date of the license and such requirements are not reasonably satisfied by the licensee;

(iii) The licensee has willfully made a false statement of or willfully omitted a material fact in the license application or in any report required by the license agreement; or

(iv) The licensee commits a substantial breach of a covenant or agreement contained in the license.

(10) The license may be modified or terminated, consistent with this subpart, upon mutual agreement of NASA and the licensee.

(11) Nothing relating to the grant of a license, nor the grant itself, shall be construed to confer upon any person any immunity from or defenses under the antitrust laws or from a charge of patent misuse, and the acquisition and use of rights pursuant to this subpart shall not be immunized from the operation of state or Federal law by reason of the source of the grant.

### Types of Licenses

#### § 1245.205 Nonexclusive licenses.

(a) *Availability of licenses.* Nonexclusive licenses may be granted under NASA inventions without publication of availability or notice of a prospective license.

(b) *Conditions.* In addition to the provisions of § 1245.204, the nonexclusive license may also provide that, after termination of a period specified in the license agreement, NASA may restrict the license to the fields of use or geographic areas, or both, in which the licensee has brought the invention to practical application and continues to make the benefits of the invention reasonably accessible to the public. However, such restriction shall be made only in order to grant an exclusive or partially exclusive license in accordance with this subpart.

#### § 1245.206 Exclusive and partially exclusive licenses.

(a) Domestic licenses.

(1) *Availability of licenses.* Exclusive or partially exclusive licenses may be granted on NASA inventions: (i) 3 months after notice of the invention's availability has been announced in the **Federal Register**; or (ii) without such notice where NASA determines that expeditious granting of such a license will best serve the interests of the Federal Government and the public; and (iii) in either situation, specified in (a)(1)(i) or (ii) of this section only if:

(A) Notice of a prospective license, identifying the invention and the prospective licensee, has been published in the **Federal Register**, providing opportunity for filing written objections within a 60-day period;

(B) After expiration of the period in § 1245.206(a)(1)(iii)(A) and consideration of any written objections received during the period, NASA has determined that:

(1) The interests of the Federal Government and the public will best be served by the proposed license, in view of the applicant's intentions, plans, and ability to bring the invention to practical application or otherwise promote the invention's utilization by the public;

(2) The desired practical application has not been achieved, or is not likely expeditiously to be achieved, under any nonexclusive license which has been granted, or which may be granted, on the invention;

(3) Exclusive or partially exclusive licensing is a reasonable and necessary incentive to call forth the investment of risk capital and expenditures to bring the invention to practical application or otherwise promote the invention's utilization by the public; and

(4) The proposed terms and scope of exclusivity are not greater than reasonably necessary to provide the incentive for bringing the invention to practical application or otherwise promote the invention's utilization by the public;

(C) NASA has not determined that the grant of such license will tend substantially to lessen competition or result in undue concentration in any section of the country in any line of commerce to which the technology to be licensed relates, or to create or maintain other situations inconsistent with the antitrust laws; and

(D) NASA has given first preference to any small business firms submitting plans that are determined by the agency to be within the capabilities of the firms and as equally likely, if executed, to bring the invention to practical application as any plans submitted by applicants that are not small business firms.

(2) *Conditions.* In addition to the provisions of § 1245.204, the following terms and conditions apply to domestic exclusive and partially exclusive licenses:

(i) The license shall be subject to the irrevocable, royalty-free right of the Government of the United States to practice and have practiced the invention on behalf of the United States and on behalf of any foreign government or international organization pursuant to any existing or future treaty or agreement with the United States.

(ii) The license shall reserve to NASA the right to require the licensee to grant sublicenses to responsible applicants, on reasonable terms, when necessary to fulfill health or safety needs.

(iii) The license shall be subject to any licenses in force at the time of the grant of the exclusive or partially exclusive license.

(iv) The license may grant the licensee the right of enforcement of the licensed patent pursuant to the provisions of Chapter 29 of Title 35, United States Code, or other statutes, as determined appropriate in the public interest.

(b) Foreign licenses.

(1) *Availability of licenses.* Exclusive or partially exclusive licenses may be granted on a NASA invention covered by a foreign patent, patent application, or other form of protection, provided that:

(i) Notice of a prospective license, identifying the invention and prospective licensee, has been published in the **Federal Register**, providing opportunity for filing written objections within a 60-day period and following consideration of such objections;

(ii) NASA has considered whether the interests of the Federal Government or United States industry in foreign commerce will be enhanced; and

(iii) NASA has not determined that the grant of such license will tend substantially to lessen competition or result in undue concentration in any section of the United States in any line of commerce to which the technology to be licensed relates, or to create or maintain other situations inconsistent with antitrust laws.

(2) *Conditions.* In addition to the provisions of § 1245.204, the following terms and conditions apply to foreign exclusive and partially exclusive licenses:

(i) The license shall be subject to the irrevocable, royalty-free right of the Government of the United States to practice and have practiced the invention on behalf of the United States and on behalf of any foreign government or international organization pursuant to any existing or future treaty or agreement with the United States.

(ii) The license shall be subject to any licenses in force at the time of the grant of the exclusive or partially exclusive license.

(iii) The license may grant the licensee the right to take any suitable and necessary actions to protect the licensed property, on behalf of the Federal Government.

(c) *Record of determinations.* NASA shall maintain a record of determinations to grant exclusive or partially exclusive licenses.

### Procedures

#### § 1245.207 Application for a license.

An application for a license should be addressed to the Patent Counsel at the NASA installation having responsibility for the invention and shall normally include:

(a) Identification of the invention for which the license is desired, including the patent application serial number or patent number, title, and date, if known;

(b) Identification of the type of license for which the application is submitted;

(c) Name and address of the person, company, or organization applying for the license and the citizenship or place of incorporation of the applicant;

(d) Name, address, and telephone number of representative of applicant to whom correspondence should be sent;

## PATENT LICENSING REGULATIONS

(e) Nature and type of applicant's business, identifying products or services which the applicant has successfully commercialized, and approximate number of applicant's employees;

(f) Source of information concerning the availability of a license on the invention;

(g) A statement indicating whether applicant is a small business firm as defined in § 1245.202(c);

(h) A detailed description of applicant's plan for development or marketing of the invention, or both, which should include:

(1) A statement of the time, nature and amount of anticipated investment of capital and other resources which applicant believes will be required to bring the invention to practical application;

(2) A statement as to applicant's capability and intention to fulfill the plan, including information regarding manufacturing, marketing, financial, and technical resources;

(3) A statement of the fields of use for which applicant intends to practice the invention; and

(4) A statement of the geographic areas in which applicant intends to manufacture any products embodying the invention and geographic areas where applicant intends to use or sell the invention, or both;

(i) Identification of licenses previously granted to applicant under Federally owned inventions;

(j) A statement containing applicant's best knowledge of the extent to which the invention is being practiced by private industry or Government, or both, or is otherwise available commercially; and

(k) Any other information which applicant believes will support a determination to grant the license to applicant.

### § 1245.208 Processing applications.

(a) Applications for licenses will be initially reviewed by the Patent Counsel of the NASA installation having responsibility for the invention. The Patent Counsel shall make a preliminary recommendation to the Director of Licensing, NASA Headquarters, whether to: (1) grant the license as requested, (2) grant the license with modification after negotiation with the licensee, or (3) deny the license. The Director of Licensing shall review the preliminary recommendation of the Patent Counsel and make a final recommendation to the NASA Assistant General Counsel for Patent Matters. Such review and final recommendation may include, and be based on, any additional information obtained from applicant and other sources that the Patent Counsel and the Director of Licensing deem relevant to the license requested. The determination to grant or deny the license shall be made by the Assistant General Counsel for Patent Matters based on the final recommendation of the Director of Licensing.

(b) When notice of a prospective exclusive or partially exclusive license is published in the *Federal Register* in accordance with § 1245.206(a)(1)(iii)(A) or § 1245.206(b)(1)(i), any written objections received in response thereto will be considered by the Director of Licensing in making the final recommendation to the Assistant General Counsel for Patent Matters.

(c) If the requested license, including any negotiated modifications, is denied by the Assistant General Counsel for Patent Matters, the applicant may request reconsideration by filing a written request for reconsideration within 30 days after receiving notice of denial. This 30-day period may be extended for good cause.

(d) In addition to, or in lieu of requesting reconsideration, the applicant may also appeal the denial of the license in accordance with § 1245.211.

### § 1245.209 Notice to Attorney General.

A copy of the notice provided for in §§ 1245.206(a)(1)(iii)(A), and 1245.206(b)(1)(i) will be sent to the Attorney General.

### § 1245.210 Modification and termination of licenses.

Before modifying or terminating a license, other than by mutual agreement, NASA shall furnish the licensee and any sublicensee of record a written notice of intention to modify or terminate the license, and the licensee and any sublicensee shall be allowed 30 days after such notice to remedy any breach of the license or show cause why the license should not be modified or terminated.

### § 1245.211 Appeals.

(a) The following parties may appeal to the NASA Administrator or designee any decision or determination concerning the grant, denial, interpretation, modification, or termination of a license:

(1) A person whose application for a license has been denied;

(2) A licensee whose license has been modified or terminated, in whole or in part; or

(3) A person who timely filed a written objection in response to the notice required by §§ 1245.206(a)(1)(iii)(A) or 1245.206(b)(1)(i) and who can demonstrate to the satisfaction of NASA that such person may be damaged by the Agency action.

(b) Written notice of appeal must be filed within 30 days (or such other time as may be authorized for good cause shown) after receiving notice of the adverse decision or determination; including, an adverse decision following the request for reconsideration under § 1245.208(c). The notice of appeal, along with all supporting documentation should be addressed to the Administrator, National Aeronautics and Space Administration, Washington, DC 20546. Should the appeal raise a genuine dispute over material facts, fact-finding will be conducted by the NASA Inventions and Contributions Board. The person filing the appeal shall be afforded an opportunity to be heard and to offer evidence in support of the appeal. The Chairperson of the Inventions and Contributions Board shall prepare written findings of fact and transmit them to the Administrator or designee. The decision on the appeal shall be made by the NASA Administrator or designee. There is no further right of administrative appeal from the decision of the Administrator or designee.

### § 1245.212 Protection and administration of inventions.

NASA may take any suitable and necessary steps to protect and administer rights to NASA inventions, either directly or through contract.

### § 1245.213 Transfer of custody.

NASA having custody of certain Federally owned inventions may transfer custody and administration in whole or in part, to another Federal agency, of the right, title, or interest in any such invention.

### § 1245.214 Confidentiality of information.

Title 35, United States Code, section 209, provides that any plan submitted pursuant to § 1245.207(h) and any report required by § 1245.204(b)(6) may be treated by NASA as commercial and financial information obtained from a person and privileged and confidential and not subject to disclosure under section 552 of Title 5 of the United States Code.

**James M. Beggs,**

*Administrator.*

October 15, 1981.

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